MacWEEK

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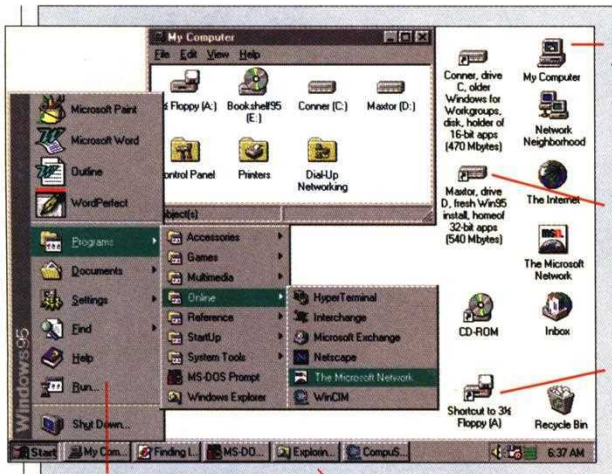

My Computer tops a series of icons grouping local and remote data.
Windows 95 has long file names that can hide file-type extensions.
Shortcuts mimic aliases but can also refer to data on the Internet or inside documents.
The focal point of Windows 95 is a knockoff of the Apple menu.
The Taskbar is faster and more obvious than the Finder's application menu.

FIRST LOOK

Win95 GUI catches up

In this three-part series, MacWEEK will examine the changes being ushered in by the biggest operating system release in history, Windows 95.

First, we will evaluate Windows' new interface from a Macintosh perspective. Second, we'll compare networking and communications across platforms. Last, we'll consider the whole package — including hardware capabilities and drawbacks — and what it means for managers at multiplatform sites.

By Stephen Howard

"Praise Copland and pass the ammunition" may be the cry of Mac zealots as Windows 95 CDs rain down from Redmond, Wash., this month, but Mac managers can't afford potshots or closed borders. Microsoft Corp.'s new OS is coming, and those who champion Apple's Macintosh need to be armed with information.

The Windows 95 user interface

See Windows 95, Page 140

Apple low-cost MPEG-1 board to play inside PCI Power Macs

By Carolyn Said

In a bid to make MPEG a more mainstream format for Mac users, Apple next year will ship a low-cost PCI card that does double duty for MPEG playback and entry-level video editing.

Besides playing back MPEG-1, the card, code-named San Francisco, will let users capture and edit VHS-quality, 640-by-480-pixel video at 30 frames per second and 60 fields per second, with a data rate of 14 Kbytes per frame, sources said. Avid Technology Inc. of Tewksbury, Mass., a leading provider of high-end video systems, was reportedly involved in the design of the card.

See MPEG, Page 140

NEWSPAPER SECOND CLASS

Copland may miss ship date

Features, timing being examined

By Robert Hess

Users eagerly awaiting a mid-1996 Copland overture may be sitting in their seats a while longer. Apple is reportedly struggling with a difficult development reality: The giant operating system project, as defined, cannot be completed by next July.

The mid-1996 deadline for the major Mac OS update was officially set at Apple's latest Worldwide Developers Conference in San Jose, Calif. (see MacWEEK, May 15, Page 1). Asked to respond to recent reports of delays, company spokeswoman Betty Taylor said, "We continue to expect to put Copland in customers' hands in mid-1996.

"We are making good progress with our efforts," she said. "Several applications, such as [Adobe] Photoshop and [Microsoft] Excel, are already up and running, and we plan our first developer release for Copland later this year. As with any complex development project, we're constantly evaluating its progress, discussing schedules and reviewing plans. We are monitoring progress every few weeks."

But, according to sources, Apple's schedules are impossible

See Copland, Page 138

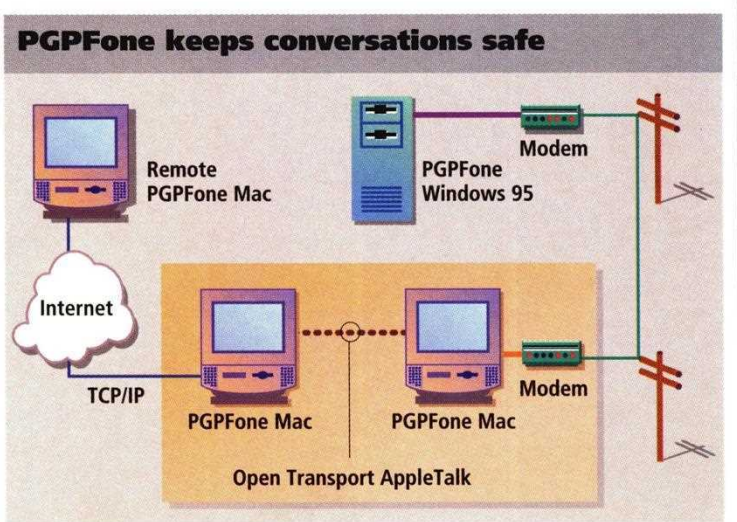
PGPFone locks down phone conversations

By Robert Hess

The debate over digital wiretaps and the Clipper chip may diminish in importance if Phil Zimmermann and a pair of developers have their way.

The group's PGPFone 1.0, a free telephony encryption program for the Macintosh, is set to ship next week. With it, two users can conduct secure conversations using the Mac's speaker and microphone, a 9,600-bps modem, and a phone line. If a PGPFone conversation is intercepted,

See PGPFone, Page 138



Newer enters new markets, touts PCMCIA

By James Staten

Newer Technology will widen its product line to encompass four Mac markets at this week's Macworld Expo in Boston. The myriad offerings include PCMCIA solutions for the entire Mac line, Ethernet, QuickDraw 3D and processor accelerator boards.

The products, all slated to ship in September and October, will increase Newer's profile in the acceleration, connectivity, memory and PowerBook peripherals markets.

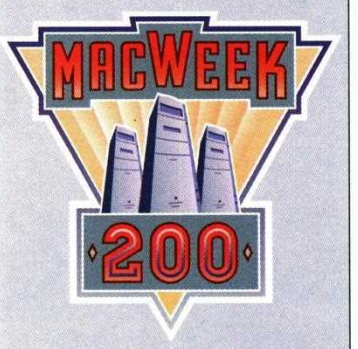
Newer will push its way in the Ethernet door with its EtherTech line, a series of 10BASE T solutions. The EtherTech A10/020 and A10/030, priced at $250 and $270, respectively, combine Ethernet connectivity with a processor upgrade and 32-Kbyte cache. The boards fit into the processor direct slot of the

See Newer, Page 138

INSIDE

SHOW PICKS

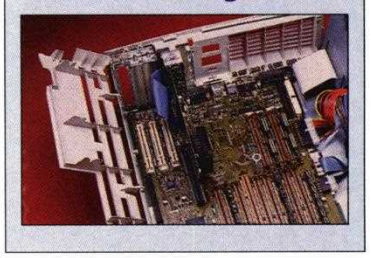
What's new, what's cool at Boston Macworld Expo. See Page 6



Our annual survey of the top Mac sites in business and education. See Page 42

RISC FOR THE REST OF US

MacWEEK road tests the new Power Mac 7200, 7500 and 8500. See Page 60



PC users have always made excuses for sticking with a lame OS...

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"But I can buy one direct."
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"But I need to run Windows apps."
"But PCs are cheaper."

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> PC Magazine
>
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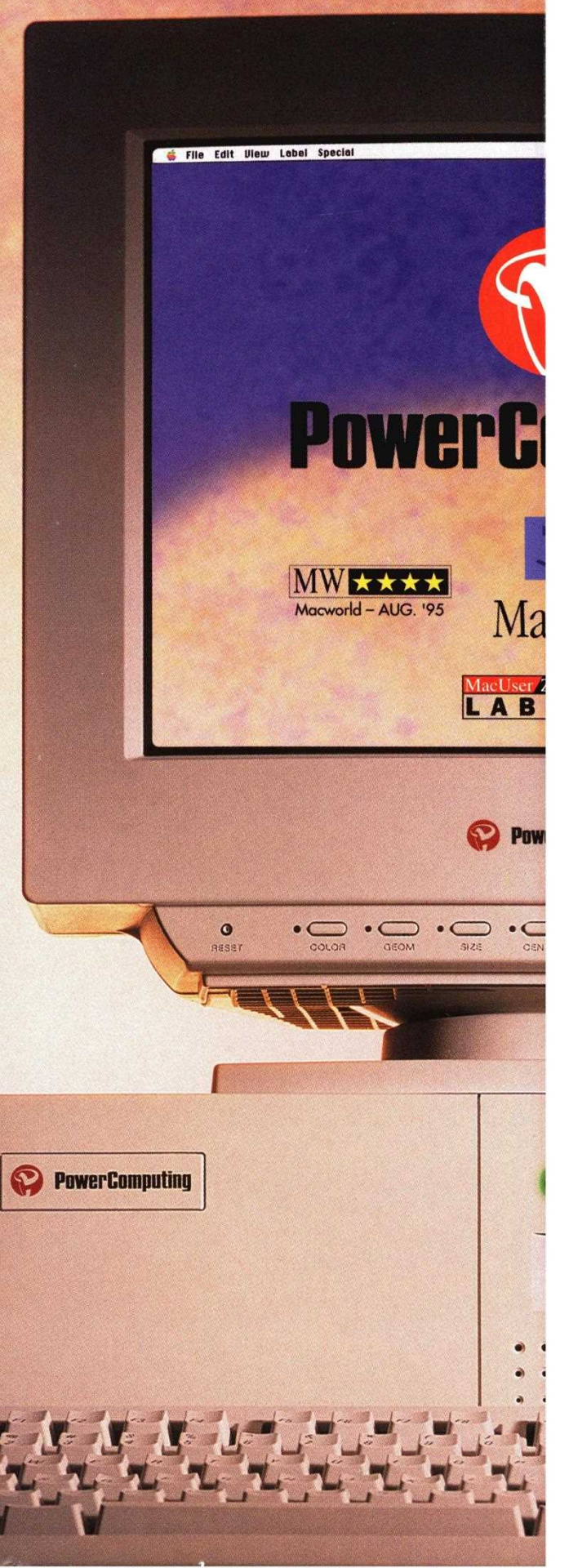

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☐ 01. Yes ☐ 02. No

1 What is your organization's primary business activity at this *entire* location?
(Select one only) Write Answer Here ➡

Non-Computer Related
01. Graphic Arts
02. Publishing
03. Advertising, Public Relations, Promotion
04. Digital Media Development
05. Entertainment/Broadcast
06. Commerical Printer
07. Service Bureau/ Pre-Press
08. Aerospace
09. Architecture, Engineering
10. Telecommunications
11. Government
12. Manufacturing
13. Education: College/ University/Trade
14. Education: High School/Elementary
15. Finance: Banking, Accounting, Insurance, Real Estate, Legal
16. Health, Medical
17. Non-Computer Retailer, Wholesaler, Distributor
18. Research and Development
19. Agriculture, Mining, Construction, Oil
20. Transportation, Utilities

Computer Related
22. Manufacturer (Computers, Software, Peripherals)
23. VAR, VAD, Systems/ Network Integrator
24. Retailer/Distributor
25. Systems House/Data Processing Service
26. Computer Consultant
27. Other Businesses and Services

99. Other_____ (please specify)

2 What is your job function?
(Select one only) Write Answer Here ➡

A. Networking/Data Communications
B. MIS/DP/Information Systems
C. Systems Engineering
D. Telecommunications
E. Graphic Arts/Design
F. Production/Pre-Press
G. Video Production
H. Audio Production
I. Communications/ Publishing/Public Relations/Advertising
J. Engineering/Architecture
K. Science/Research & Development
L. Education/Training/ Development
M. Manufacturing/ Operations/Production/ Quality Control
N. Administration/ Management/Personnel
O. Accounting/Finance/ Legal
P. Sales/Marketing
Q. Purchasing
R. Consulting
Z. Other_____ (please specify)

3 Which of the following brands of systems and/or applications software do you have installed at this *entire* location? (Check all that apply)

Operating Systems
☐ 01. System 7
☐ 02. System 6, 5 or earlier
☐ 03. Unix/Xenix/AUX/AIX
☐ 04. PowerOpen
☐ 05. Windows
☐ 06. NeXTStep
☐ 07. Solaris
☐ 08. OSF/Motif
☐ 09. Other_____ (please specify)

Network Operating Systems
☐ 11. Novell NetWare
☐ 12. Unix/NFS
☐ 13. LAN Manager
☐ 14. Banyan VINES
☐ 15. AppleShare
☐ 16. DEC PathWorks
☐ 17. Other_____ (please specify)

Groupware
☐ 19. Lotus Notes
☐ 20. Windows for Workgroups
☐ 21. FirstClass
☐ 22. Novell GroupWise
☐ 23. Apple Open Collaboration Environment (AOCE)
☐ 24. Other_____ (please specify)

Database Engines
☐ 26. Oracle
☐ 27. Sybase SQL Server
☐ 28. Ingres
☐ 29. Informix
☐ 30. 4D Server
☐ 31. DB2
☐ 32. Other_____ (please specify)

On-Line Services
☐ 34. America Online
☐ 35. Compuserve
☐ 36. e-World
☐ 37. Prodigy
☐ 38. Internet
☐ 39. Delphi
☐ 40. Genie

4 Please indicate the quantities of the computers currently installed and indicate the computers planned for purchase in one year at this *entire* location.

(Write in accurate quantities for all that apply)	Currently Installed (Quantity)	PLAN TO PURCHASE
Macintosh/Compatible		
Apple Power Mac 8100	1.	1. ☐
Apple Power Mac 7100	2.	2. ☐
Apple Power Mac 6100	3.	3. ☐
Radius Power Mac Compatible	4.	4. ☐
Power Computing Power Mac Compatible	5.	5. ☐
Daystar Power Mac Compatible	6.	6. ☐
Other Power Mac Compatible	7.	7. ☐
Macintosh Quadra	8.	8. ☐
Macintosh Centris	9.	9. ☐
Macintosh Performa	10.	10. ☐
Macintosh PowerBook	11.	11. ☐
Macintosh Duo	12.	12. ☐
Macintosh Other (II, LC, SE, etc...)	13.	13. ☐
Other Mac Compatible	14.	14. ☐
Other Desktops		
IBM/Compatible Desktop/Laptop/Notebook	15.	15. ☐
PowerPC (Non-Mac Compatible)	16.	16. ☐
Workstation (SPARC, MIPS, HP/Apollo, etc)	17.	17. ☐
Other Microcomputers	18.	18. ☐

USE NUMBERS ONLY

5A How many servers are installed at this *entire* location? (Use numbers only)

5B How many LANs are installed at this *entire* location? (Use numbers only)

5C How many Macintoshes are connected to the LANs indicated in Question 5B above? (Use numbers only)

6 If applicable: how many Macintoshes are sold, resold, or recommended in one year at this *entire* location?

A. Retailer: Number sold per year_____
B. Reseller: Number resold per year_____
C. Consultant: Number purchased by your clients through your firm's recommendation per year_____
D. Other: Number sold/resold/recommended per year_____
☐ E. Not Applicable

7A Which of the following Macintosh-related products do you specify, recommend, buy or approve the purchase of? (Check all that apply)

Systems
☐ 01. Apple Macintoshes
☐ 02. Mac Compatibles
☐ 03. IBM Compatible Micros
☐ 04. Servers
☐ 05. Workstations
☐ 06. Minis/Mainframes
☐ 07. Newton PDA
☐ 08. Pen-Based Computers

Networking
☐ 10. LANs
☐ 11. WANs
☐ 12. Mac to PC Links
☐ 13. Mac to Mini/ Mainframe Links
☐ 14. Mac to Unix Workstation Links
☐ 15. Modems
☐ 16. Communication/ Network Software
☐ 17. Bridges/Routers/ Gateways
☐ 18. Hubs
☐ 19. NICS

Printers
☐ 21. Laser
☐ 22. Color Laser
☐ 23. InkJet
☐ 24. Color InkJet
☐ 25. Dye Sub
☐ 26. Thermal Wax
☐ 27. Plotter
☐ 28. Portable Printer

Image Input
☐ 30. Digital Camera
☐ 31. Flatbed Scanners
☐ 32. Handheld Scanners
☐ 33. Slide Scanners
☐ 34. Drum Scanners
☐ 35. Black/White Scanners

Displays
☐ 37. 14 inch
☐ 38. 15 inch
☐ 39. 17 inch
☐ 40. 21+ inch
☐ 41. LCD Projection Panel
☐ 42. Presentation Monitors

Peripherals
☐ 44. UPS
☐ 45. External Speakers
☐ 46. Input Devices
☐ 47. Video Deck
☐ 48. Image Setter

Storage
☐ 50. Photo CD
☐ 51. Magneto Optical
☐ 52. RAID
☐ 53. Hard Drive 1 Gig +
☐ 54. Hard Drive < 1 Gig

Add-In Boards
☐ 56. CD Recorder
☐ 57. Memory Boards
☐ 58. Display Boards
☐ 59. Video Digitizer Boards
☐ 60. Accelerator Boards
☐ 61. Sound Boards
☐ 62. MIDI
☐ 63. Video Capture/ Compression

99. ☐ None of the above

Signature_____

Title _____ Date ___/ ___/___

7B Which of the following systems and/or applications software do you specify, recommend, buy or approve the purchase of? (Check all that apply)

Graphic Arts
☐ 01. Desktop Publishing
☐ 02. Electronic Publishing
☐ 03. Painting/Drawing Programs
☐ 04. Photo Retouching
☐ 05. Page Layout
☐ 06. Illustration Programs
☐ 07. Fonts
☐ 08. Pre-Press
☐ 09. Color Management
☐ 10. Digital Video
☐ 11. Other_____ (please specify)

Multimedia
☐ 13. Authoring Software
☐ 14. Video Editing
☐ 15. Sound Editing
☐ 16. Music Composition/ Editing
☐ 17. Animation
☐ 18. Clip Media (Sound and Art)
☐ 19. Other_____ (please specify)

Presentation Graphics
☐ 21. Presentation Software
☐ 22. Multimedia Presentations
☐ 23. Charting Programs
☐ 24. Other_____ (please specify)

Design/Engineering
☐ 26. CAD/CAM
☐ 27. 2/D - 3/D Modeling
☐ 28. Simulation
☐ 29. Other_____ (please specify)

Business Applications
☐ 31. Word Processing
☐ 32. Spreadsheets
☐ 33. Databases
☐ 34. Project Management
☐ 35. Accounting/Payroll
☐ 36. Groupware
☐ 37. Desktop Video Conf.
☐ 38. Document Management
☐ 39. Mapping/GIS
☐ 40. Pen-Based Applications
☐ 41. Other_____ (please specify)

Systems Management
☐ 43. Operating Systems
☐ 44. Utilities
☐ 45. Applications Development
☐ 46. CASE
☐ 47. Programming Languages
☐ 48. Compilers
☐ 49. SQL Applications
☐ 50. Client Servers Applications
☐ 51. Other_____ (please specify)

99. ☐ None of the above

8 If you indicated purchasing involvement for computers, computer products or services in Question 7A or Question 7B, for how many Macintoshes do you have this involvement? (Select one only) Write Answer Here ➡

01. 2000+
02. 1000-1999
03. 500-999
04. 100-499
05. 50-99
06. 20-49
07. 10-19
08. 5-9
99. None

9 For what applications are the Macintoshes at your location used? (Check all that apply)

☐ 01. Graphic Arts
☐ 02. Presentation Graphics
☐ 03. Multimedia
☐ 04. Design/Engineering
☐ 05. Business Applications
☐ 06. Systems Management
☐ 99. Other_____ (please specify)

10 Over the course of one year, do you specify, recommend, buy, or approve the purchase of host systems, desktops, networking products, peripheral equipment and/or software worth: (Write number in box)

1. $5,000,000 or more
2. $2,500,000 to $4,999,999
3. $1,000,000 to $2,499,999
4. $600,000 to $999,999
5. $400,000 to $599,999
6. $200,000 to $399,999
7. $100,000 to $199,999
8. $50,000 to $99,999
9. $25,000 to $49,999
10. $10,000 to $24,999
11. Less than $10,000
99. None

Product Category	For this location (Write number in box)	For other locations (Write number in box)
Host Systems (Mainframes/Minis)	A.	G.
Desktops/Portables (Micros/Workstations)	B.	H.
Networking Products (include Servers)	C.	I.
Peripheral Equipment	D.	J.
Software Products	E.	K.
Service/Support	F.	L.

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MacWEEK

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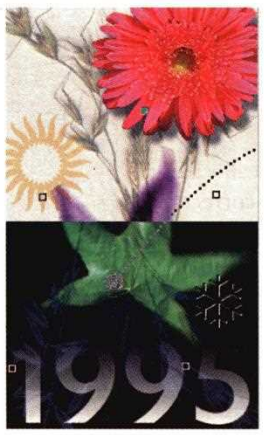
35 BUSINESS

Newsmaker: Enzo Torresi • Apple's jolly good Fellows • Used Macintosh prices

42 MACWEEK 200

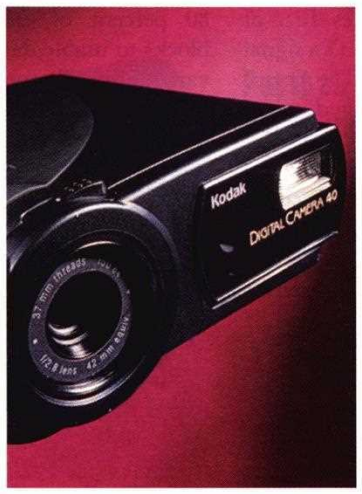
The seventh annual poll reports booming Power Mac sales, mixed reaction to clones.



Adobe After Effects 3.0 enhances special effects and, when released in September, will come in a high-end version aimed at the broadcast and film industry. See GA, Page 18.

WYSIWYG Web editor brings the integrated look of a browser to HTML page creation. Ceneca's PageMill is due in September. See Gateways, Page 24.

Kodak's Digital Camera 40, jointly developed with Apple, improves on the QuickTake 100 with higher storage capacity and professional features. See Reviews, Page 71.



60 SPECIAL REPORT

"RISC for the rest of us" could be Apple's slogan for the new PowerPC-based Macs.

71 REVIEWS

FrameMaker 5.0 • Kodak Digital Camera 40 • Comparison: Network fax servers • In Brief: ScanWizard 3.0 • Reviews Forum

87 SOLUTIONS

Low-cost drawing tools fill the bill if you're short on funds, time and training.

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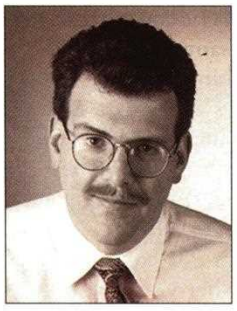
MACWEEK INSIDER ANDREW GORE

What — me worry?

When I was growing up, MAD magazine was the Utne Reader of the adolescent set. The biting cold-war allegory of Spy vs. Spy; the sometimes brilliant satire on popular culture; and, of course, Alfred E. Neuman.

Al was an important role model in my junior high school. His slogan, "What — me worry?" summed things up nicely. And, I must admit, even today when I contemplate difficult situations, such as the uncertain future of the Macintosh, I find solace in his profoundly simple philosophy.

Apple has some serious problems, many of which past Insider columns have examined with the subtlety of a proctologist's ice-cold hands. Certainly, the now days-away debut of Windows 95 is cause for concern for anyone betting on the Mac. And another possible delay for Copland can't be a good thing.



But I'm not worried.

I've had a chance to play with Windows 95, and while I'll admit it's a big improvement over Windows 3.x, it still reminded me of the goofy-looking back page in MAD where you turned one piece of art into something else by folding it together. That's Windows 95: the same old thing folded up to look like something else; specifically, the Mac. I think Apple's new anti-Windows ad campaign does a nice job pointing this out (even if they didn't use "Been there, done that").

I found even more encouragement from corporate IS. Of the Mac managers I've talked to, I haven't found a single one who is looking to throw out the Mac for Windows 95. And if Windows 95 isn't cause enough for Mac sites to switch to the Intel platform, then as long as Apple focuses its efforts on making sure the needs of the installed base are met, I believe the Mac will make it through the Windows 95 gantlet just fine.

Which brings me to another cause for optimism — Apple's new focus on solutions marketing. If ever a strategy was right for keeping the installed base happy, this is it. Apple Vice President Dan Eilers and his crew deserve a round of applause for getting Apple focused on what it does well, instead of running around trying to do things for which it has no core competence. Let's just hope that Eilers will be able to stay the course and this doesn't turn out to be just another Apple strategy du jour.

So, about now you are probably wondering what good I can find in another Copland delay. Well, frankly, there's nothing good about it. It's a damn shame. But I also don't think it's going to be a disaster.

Windows 95: The same old thing folded up to look like something else.

Many observers have underestimated just how big a change Copland is going to be for the Macintosh market. It's at least as dramatic a shift as Windows 95 will be for current Windows users. A lot of software will need to be rewritten; a lot, such as system extensions, won't work at all.

If Copland takes another year for Apple to do it right, so be it. I'd rather get something that works in mid-1997 than get something that almost works in mid-1996. This is one case where Apple needs to take the high road and not start throwing important capabilities over the side to make a deadline, as Microsoft Corp. has done with its latest OS.

However, I would support Apple doing a version of the Copland user interface that works with System 7.5.x. The company could come out with a Copland User Experience tool kit, which would give users a chance to play with the most eye-catching aspects of Apple's new OS and give developers a chance to explore the possibilities inherent in the new interface toolbox. It's a win-win situation for users and developers and gives Apple something it can put up against the Windows juggernaut.

Whether you get some part of Copland in 1996 or not, you'll still have the great pleasure of watching your Windows-using friends suffer through what will be a very difficult upgrade. And when those friends come to you crying over the pains of an OS upgrade that gives them what you've had for years on your Mac, think of Al's beatific smile and remember: no worries. ◻

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Pinnacle MO: New Apex

Capacity ascends to 4.6 Gbytes

By David Morgenstern

Leapfrogging over capacities proposed for next-generation standards, Pinnacle Micro Inc. last week announced Apex 4.6 GB, a magneto-optical drive that will pack 4.6 Gbytes onto a cartridge. The mechanism is slated for a September release.

Besides high capacity, Pinnacle said, the $1,500 device will provide an average data transfer rate of 4.5 Mbytes per second and an average access time of 17 milliseconds, twice as fast as current lower-capacity MO drives.

"Apex has changed the landscape of the MO market," said analyst Ray Freeman, president of Freeman Associates Inc. of Santa Barbara, Calif. "It's a signal announcement: optical at a price that's not disadvantaged when compared to hard drive prices."

Pinnacle said Apex will have a cost per megabyte of 17 cents, similar to that of a 4-Gbyte hard drive; its current generation of 3.5-inch and 5.25-inch MO drives offers costs per megabyte of $1.85 and $1.25, respectively.

The company said it will boost capacity by using a lens with a smaller aperture and a proprietary Mitsubishi-manufactured 5.25-inch disk with expanded writeable areas on the inside and outside surfaces. Each cartridge is expected to cost $199.

The drive will also provide an audiovisual mode that expands capacity to 5.4 Gbytes by reallocating 80 percent of error-correction blocks to usable data. By using a variable spindle speed in the AV mode, the drive will provide an uninterrupted sustained data transfer rate of 3.3 Mbytes.

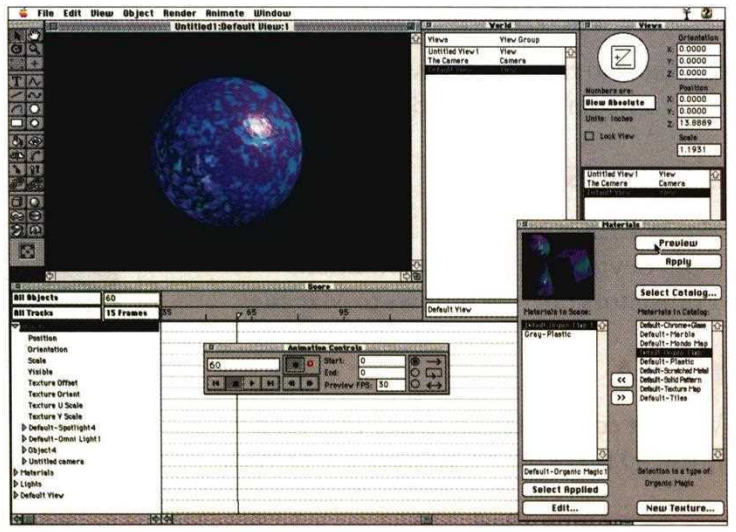
The company said Apex will also be compatible with forthcoming 2- and 2.6-Gbyte MO standards, which will reportedly be used in drives from a number of vendors early next year.

The Fast SCSI-2 drive will have a built-in jukebox interface compatible with mechanisms from Hewlett-Packard Co.

Analysts said Apex will present Pinnacle with a production challenge. Instead of modifying mechanisms manufactured by OEM vendors, the company will build Apex itself at a new plant in Colorado. Pinnacle said it can produce up to 40,000 units per month; it expects the drive to be integrated into several workstation systems.

"Their conceptual work is impressive," said Bob Katzive, an analyst with Disk/Trend Inc. of Mountain View, Calif. Katzive said Apex was likely to cannibalize the sales of the smaller players in the MO market. "Now it's up to Pinnacle to make it fly."

Pinnacle Micro Inc. of Irvine, Calif., can be reached at (714) 789-3000 or (800) 553-7070; fax (714) 789-3150. □



Macromedia Extreme 3D combines modeling, rendering, animation and compositing and borrows some interface elements from FreeHand and Director.

Macromedia 3-D app goes to the Extreme

By Carolyn Said

Opening a one-stop shop for 3-D production, Macromedia Inc. this week will launch Extreme 3D, which combines modeling, rendering, animation and compositing.

Due by October for Mac and Windows machines, the $695 Extreme 3D will replace Macromedia's MacroModel, Three-D, ModelShop and Swivel. Upgrades from all four programs will be available.

Extreme 3D will use a spline-based modeler that will offer drawing tools similar to those in Macromedia FreeHand. Users will be able to easily create 3-D models from 2-D objects with Extrude, Lathe, Skin or Sweep functions. Twist, Bend, Taper and Skew tools will let users trim surfaces and deform objects over time.

The program can animate anything that can be edited, Macromedia said, including characteristics such as the color of a light. A Score window similar to the one in Macromedia Director will control time- and frame-based animation as well as provide data filtering, visual feedback, interactive keyframe manipulation, and cut and paste in a single window.

Procedural rendering will let users create an infinite number of materials from a selection of basic material shaders.

Distributed rendering will let users split tasks among multiple networked Macs and Windows machines. Finished images can measure up to 8,000 pixels square.

Extreme 3D will include a post-production compositing tool called Extreme FX that allows users to composite finished still and animated clips for use with video-editing applications.

Macromedia said future versions will support QuickDraw 3D's 3DMF (3-D metafile format) and hardware acceleration, as well as multiprocessing.

Macromedia Inc. of San Francisco is at (415) 252-2000 or (800) 326-2128; fax (415) 626-1502; http://www.macromedia.com. □

Apple's monitors move music to ears of Mac users

By James Staten

Apple will increase the volume of its multimedia monitors at Boston's Macworld Expo this week when it rolls out two models with built-in stereo speakers.

The AppleVision 1710AV, priced at $1,159, is a 17-inch version of the 2-year-old AudioVision 14 Display, which features built-in stereo speakers, a microphone and a front-mounted headphone jack.

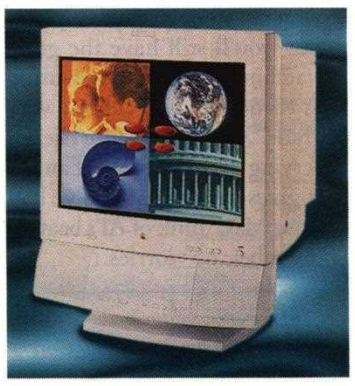
The new model adds several color-management features. Besides support for ColorSync 2.0, the 1710AV is the first monitor to feature DigitalColor, a new Apple technology that provides automatic color calibration and corrects for the effects of ambient room lighting, phosphor aging and glass browning over time.

The 1710AV uses a Sony Trinitron tube with a 16.1-inch image area and a 0.26mm stripe pitch. It has a maximum resolution of 1,024 by 768 pixels and on-screen controls for brightness, contrast, image size, rotation, pincushion and white point.

The company will also ship the $359 Apple Multiple Scan 14 Display. It features a 14-inch tube with an image area of 12.4 inches and a 0.28mm dot pitch. Mac images can be displayed at a maximum resolution of 640 by 480 pixels, while VGA images output by Intel-standard machines can be shown at a resolution of 800 by 600 pixels at 72 Hz.

The Multiple Scan 14 Display does not include a built-in microphone, DigitalColor or ColorSync 2.0 support, but it does offer front-panel controls for brightness, contrast and image size.

Both displays comply with the MPR II and Energy Star standards; the 1710AV features the ability to power down to a zero-watt sleep state when not in use, Apple said. □



The AppleVision 1710AV marks the debut of new color-management features, including technology to correct for the effects of room lighting, phosphor aging and glass browning.

SoftWindows 486 released

By Matthew Rothenberg

Intel-standard PC emulation will cross a new threshold at this week's Macworld Expo in Boston when Insignia Solutions Inc. delivers Version 2.0 of SoftWindows.

The upgrade fully emulates the Intel 486 processor and handles Microsoft Windows' enhanced mode, Insignia said; its predecessor, SoftWindows 1.5, emulated only a 286 chip. However, the software reportedly does not offer significant speed improvements over earlier versions (see MacWEEK, June 26, Page 1).

Version 2.0 adds support for the Windows Sound System, allowing some PC programs to play back and record audio. The software still lacks support for Creative Labs Inc.'s SoundBlaster card.

It provides connectivity to Novell NetWare, TCP/IP, LAN Manager, Windows NT, Banyan Vines and Digital Equipment Corp.'s Pathworks servers over both Ethernet and token-ring networks. Insignia said SoftWindows 2.0 lets Mac and Windows applications share the same IPX connection for networking.

SoftWindows 2.0 allows Mac users to automate basic tasks in their Windows or DOS applications via AppleScript. It also features Apple Guide help.

SoftWindows 2.0 costs $499, the same as earlier versions; upgrades are $129.

Insignia Solutions Inc. of Mountain View, Calif., can be reached at (415) 694-7600 or (800) 848-7677; fax (415) 694-3705. □

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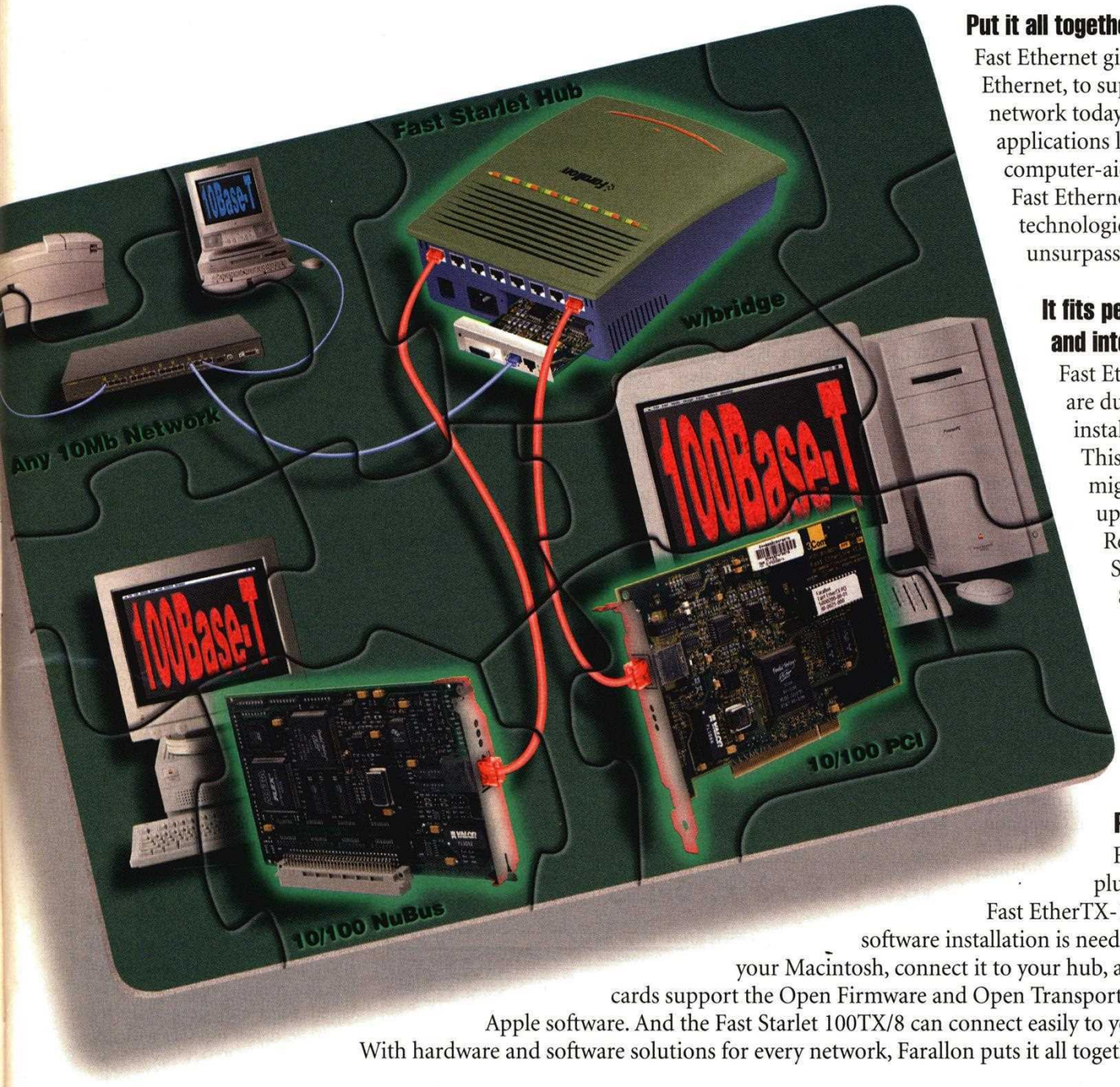

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Show Picks

NEVIN BERGER

Never mind the Bullock; there's plenty at Macworld to net show goers' attention even if there are no Sandra sightings. As up-to-the-minute as this summer's Netsploitation movies, Apple will deliver its trio of new PCI Macs, with another trio — the clone makers — on hand to grab some limelight. The Boston expo should also do good box office because of the premiere of QuickDraw 3D, Internet vignettes, graphics app sequels and matinee-priced PCI cards.

CPUs

Hitting two Macworld Expo milestones at once, this year's show floor will display functioning Mac OS clones and next-generation Macintosh models sporting the PCI bus. For the first time, users will have to check both the model and the manufacturer while witnessing product demos.

Highlighting the CPU parade is the debut of Apple's expanded PCI Mac lineup. The three-slot Power Mac 8500, 7500 and 7200, familiar to MacWEEK readers by code names Nitro, TNT and Catalyst, join the 9500, which hit the streets two months ago. Attendees can expect crowds surrounding digital video demonstrations on the 8500 audiovisual workstation and QuickTime Conferencing on the 7500. Apple will focus on MPEG playback and telephony applications for the 7200.

Apple will also give entry-level users a look-see at the new 75-MHz PowerPC 603-based Performa configurations: the all-in-one Performa 5200 and the 6200, which uses a Quadra 630 case. Also on hand will be Apple's new video-tuner, DOS-compatible and MPEG cards for the models.

Sharp-eyed readers of the show guide will notice that mail-order clone-maker Power Computing Corp. does not have a booth of its own, but its low-priced Power 100 models can be found in more than 50 booths on the floor; look for a white card with Power's red and black logo. Attendees with questions about the machines will be handed a card with the company's 800 number; company reps will also be handing out a fun freebie: a CD with demos of Marathon 2 and other goodies.

Show goers will have an opportunity to check out Radius Inc.'s recently unveiled 81/110 clone, which is similar to Apple's Power Mac 8100/110.

DayStar Digital Inc. will show off its speedy Genesis MP clone, which the company said will now come with four CPUs that work in parallel, and six PCI slots. About 200 developers have committed to revising their applications to support DayStar's multiprocessing architecture, which will be offered as a CPU daughtercard upgrade for the new Power Macs later this year.

Graphics

The third dimension should be a big draw at the expo as Apple launches QuickDraw 3D, its system-level architecture for 3-D interaction. Strata Inc.'s StudioPro 1.75, shipping at the show, will lead the parade of applications taking advantage of QuickDraw 3D. In other 3-D news, Macromedia Inc. will unveil Extreme 3D, which combines the features of its multiple 3-D programs into one package for modeling, rendering, animation and compositing. Meanwhile, Specular International Ltd. will release Infini-D 3.0, which sports a new spline-based modeler and animation sequencer.

Digital video will see some action, as Data Translation Inc. shows Vincent, a single PCI card that will offer complete features for video capturing and editing. Avid Technology Inc. is now shipping Media Suite Pro 4.0, the latest version of its NuBus-based system. And, for special-effects wizards, Adobe Systems Inc. has updated After Effects with increased integration with Photoshop and Illustrator, enhanced motion control, and batch rendering.

Adobe PageMaker users will want to check out Version 6.0 of the page-layout program, now with multiple master pages, built-in color management, locking and grouping, HTML (Hypertext Markup Language) capabilities, and compatibility with Photoshop plug-ins.

The Canvas 5.0 demo at the Deneba Software booth is sure to be crowded with artists curious to see if one program can really do illustration, image editing, page layout and presentations without skimping on features.

For multimedia producers, PowerProduction Software has a scriptless authoring tool, Digital Box Office. Meanwhile, Interactive Media Corp. has upgraded Special Delivery, its entry-level authoring package.

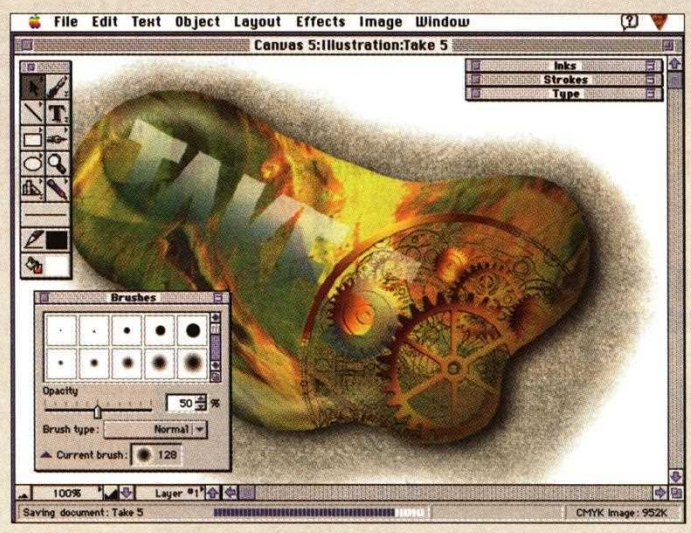
Visitors to Wacom Technology Corp.'s booth can see what they can do — and undo — using digitizer tablets with erasing pens. Fractal Design Corp. joins in with an incremental upgrade to Dabbler that supports the pressure-sensitive eraser on Wacom's pens. And bargain hunters will note that Dabbler's price has been cut to $69, down from $99.

Graphisoft U.S. Inc. will offer its new $1,079 bundle of a start-up package for ArchiCAD's PayPer-User program and Strata's Vision 3D 4.0. Not to be confused with its competitor, Graphsoft Inc. will preview MiniCad 6.0, which will group drawing and drafting tools into industry-specific menus.

Multimedia developers can pick up some zesty components for future projects at the gray matter design booth. The sets of textures, buttons, sounds and video effects for multimedia are royalty-free.

PictureWorks Technology Inc. will be at the Eastman Kodak Co. booth showing a new version of PhotoEnhancer, its image-acquisition program for digital cameras. Kodak will show off Photo Insert, software that lets users of Microsoft Word or WordPerfect drop in Photo CD images.

NEW CANVAS UNFURLED



No doubt one of the most dramatic transformations at the show will be Deneba Software's Canvas, which has metamorphosed from an illustration application into what amounts to an integrated suite of image-editing, page-layout, presentation and illustration tools. The multifaceted new version, Canvas 5, is slated to ship at year's end.

Networking

Adding to the Internet saturation, InterCon Systems Corp. will show a World-Wide Web browser with its new Internet tools. WebShark, an integrated Web, FTP and Gopher client, and PostalShark, an Internet e-mail application, are expected to ship later this month. The company will also show its recently shipped InterServer.

Apple will jump into the Internet tools market with the Apple Internet Connection Kit, a collection of shareware fare and a tool designed to ease the sign-up process when connecting through an Internet access provider. It will also include a stripped-down version of Claris Corp.'s Emailer.

StarNine Technologies Inc. will demonstrate new tools that enhance its WebStar Internet server. They include a CGI (Common Gateway Interface) for subscribing and reading digests from ListStar mailings lists via the Web. StarNine will also be previewing Version 1.2 of WebStar. The upgrade will offer a 30 percent speed improvement and pick up the capability to serve multipart files.

And, to make Web-site creation and maintenance a more WYSIWYG experience, Ceneca Communications Inc. will unveil SiteMill and PageMill. PageMill is a fully graphical HTML editor that supports drag-and-drop link creation and image placement. SiteMill, which incorporates PageMill, maintains a directory of all HTML pages and page elements and automatically updates all linked pages when one is renamed, moved or deleted.

There will be lots of new sights for e-mail users as CE Software Inc. shows off QuickMail 3.5, due late this month with new server-based rules and drag-and-drop message handling. CE will ship InterCall, a UUCP (Unix to Unix Copy Program) gateway for QuickMail, and QuickMail NameServer Database Distribution, an application that automatically updates multiple LAN QuickMail NameServers.

ON Technology Corp. will announce a remote Mac client for Da Vinci eMAIL 3.2, which now offers native support for Novell Inc.'s NetWare Directory Services. The company will also put the new Mac client for Notework 4.0 through its paces.

SoftArc Inc. will offer a look at its new FirstClass 2.7 client for Power Macs, offering speed improvements in mail sorting and graphics redrawing.

MacWEEK REPORT
Mac clones hit the big time as Expo doors open
Snarled Strategy stalls server
Claris to claim Apple programs
LAN product makes waves

MACWEEK EXPO

MacWEEK Report, a special daily show print edition, will provide up-to-the-minute news and commentary. Look for it on the show floor on Tuesday, Wednesday and Thursday.

Even if you didn't make it to Boston this week, you can stay up on the happenings through **ZiffNet/Mac**. Daily reports from the expo will be posted in the MacWEEK forums on CompuServe and eWorld and on the World-Wide Web at http://www.zdnet.com/~macweek/.

To hear **MacWEEK editors' forecasts** on the upcoming highs and lows in the Mac product market, check out our presentation Aug. 9 from 2:30 p.m. to 3:45 p.m. in Bayside Expo Center, Meeting Room E.

For those in the X Window System world, Apple will demonstrate its new server upgrade, MacX 1.5, which offers built-in window management and supports X11R6 extensions such as font servers and color mapping.

Gearing up for the new PowerBooks, Dayna Communications Inc. will announce a slew of PCMCIA cards, including Ethernet adapters and 14.4-Kbps and 28.8-Kbps cellular-ready modems. Dayna will also show modems with on-board Ethernet and a wireless LAN adapter.

Mac database users will have plenty to see. EveryWare Development Corp. will have on hand the upcoming version of ButlerLink/Web, which puts databases on the Web. Pictorius Inc. will show the upcoming versions of its client-server development tool, Peregrine, and its object-oriented programming language, Prograph CPX. Jyacc Inc. will show Jam 6, its cross-platform application-development tool. Jyacc may also offer previews of the upcoming version of Jam for the Mac to people who ask nicely.

PCI

Plenty of vendors will line up with offerings for the PCI slots in Apple's new Power Macs. Expect to see a lot of graphics cards on display. Diamond Multimedia Systems Inc. will show its Javelin Video 3240XL and 3400XL PCI cards, which support 24-bit video at 1,152 by 870 pixels and 30-frame-per-second video playback. ATI Technologies Inc. will show its self-labeled version of the Apple Accelerated PCI Graphics Card, which is bundled with the Power Mac 9500/120. Radius will show its Thunder and PrecisionColor 24-bit graphics cards that are aimed at prepress professionals. In the Apple booth, Adaptive Solutions Inc. will show off both PCI and NuBus versions of PowerShop, its 64-chip digital signal processing accelerator for Photoshop.

Storage vendors will showcase SCSI PCI accelerator cards to increase performance with arrays. ATTO Technology Inc. will show its ExpressPCI line of Fast and Wide SCSI-3 cards. RAID vendors, such as FWB Inc., MicroNet Technology Inc., Microtech International Inc. and Optima Technology Corp., will demo PCI and array bundles.

Networking companies expect to play up recent PCI and Fast Ethernet announcements. Asanté Technologies Inc. will debut a 10-Mbps Ethernet PCI card. Asanté will also formally announce a 10/100BASE T NuBus card and show off its recently released 10/100BASE T PCI card.

Rockwell Network Systems will have its Fiber Distributed Data Interface and Fast Ethernet PCI cards in its booth, and Farallon Computing Inc. will have on hand its recently released 100BASE T devices.

Dayna will demo its line of BlueStreak Fast Ethernet devices, in both PCI and NuBus formats, and an upcoming 16-port Ethernet hub.

Technical users can check out the National Instruments Inc. booth, which will feature the $495 PCI-GPIB, a General Purpose Interface Bus card, and three PCI-based data acquisition boards.

Productivity

ClarisWorks 4.0 will headline a spate of productivity tools. The integrated package features improvements to the word processing module, including multiple sections and new style-sheet capabilities.

Meanwhile, ClarisImpact 2.0, the company's cross-platform business graphics and presentation application, is also expected to draw gawkers. The upgrade, due this month, lets users automate the creation of diagrams from spreadsheets and databases.

Expect to see prominent displays of Microsoft Corp.'s Project 4.0 for Macintosh and Power Mac, now including the Visual Basic for Applications programming language. Users in search of other project-management software should check out a pair of upgrades from Micro Planning International Inc.: Micro Planner X-Pert 2.4 and Micro Planner Manager 1.4.

On the accounting front, Peachtree Software Inc. will introduce Peachtree Accounting for Macintosh 2.5, the first major upgrade of the $99 prorgram in nearly three years. EveryWare is showing Connected 3.0, a mid-range multi-user accounting program. Intuit Inc. will show off QuickBooks Pro, an expanded version of Intuit's QuickBooks 3.0 that includes time tracking, job-costing estimates, accounting and payroll features.

Speaking of integrated business-management software, Automatic Software plans an expo debut for Big Business, a program for small businesses that combines sales, marketing, inventory and finance.

Peripherals

A multitude of hardware vendors will vie for the Macworld Expo buyer's dollar with a cornucopia of new storage, input, output and display options.

"Color" will be the watchword for printer vendors. Check out Apple's Color LaserWriter 12/600 PS, its enhanced StyleWriter 2400 inkjet model and its portable Color StyleWriter 2200. The company's monochrome offerings will include the low-cost LaserWriter 4/600 PS.

Tektronix Inc. will show off its revamped color printer line, which features the Phaser 480X, a full-bleed tabloid-size dye-sub model; the Phaser 540 Plus, an enhanced version of the company's color laser; and the Phaser 240, a new thermal-wax printer for business presentations.

Hewlett-Packard Co. will demonstrate its trio of new color inkjets: the high-end PostScript Level 2-based DeskJet 1600CM, the cross-platform DeskJet 850C and the low-cost DeskWriter 600.

For users seeking to turn their digital files into continuous-tone printed snapshots, Fargo Electronics Inc. will show FotoFUN!, a dye-sublimation printer that will list for less than $500 and output 4-by-6-inch photo-realistic images.

Macworld Expo will be the public unveiling of Apex, Pinnacle Micro Inc.'s $1,500 magneto-optical drive that packs 4.6 Gbytes on a $199 platter. Nomaï USA will debut MCD 540, its $600 Winchester-technology removable-media drive. It uses $60 540-Mbyte cartridges.

SyQuest Technology Inc. will introduce the EZ135, its low-cost removable hard drive. It will also be the first opportunity for many to see Iomega Corp.'s Zip and Jaz removable-media drives.

On the monitor front, Focus Enhancements Inc., Ikegami Electronics Inc., NEC Technologies Inc., Sharp Electronics Inc., Sony Corp. and ViewSonic Corp. will all show new displays that have shipped in the past six months, including a variety of 15- and 17-inch monitors for less than $1,000. Portrait Display Labs Inc. will show off its 17-inch Pivot 1700, which can rotate from landscape orientation to portrait mode. Radius will attempt to lure image editors and desktop publishers to its PressView 21 SR, MultiView 21 and PrecisionView 21, all 21-inch displays designed to provide acute color accuracy.

Don't Miss

SpeedDoubler, the long-awaited Power Mac performance enhancement utility from Connectix Corp., will ship at the show.

Insignia Solutions Inc. will finally be shipping SoftWindows 2.0, its long-awaited Windows emulation software for Power Macs.

Metrowerks Inc. will be on hand to preview CodeWarrior 7. Due in September, it will offer one unified development environment with simple drop-ins of Pascal and C compilers for Mac, Intel, General Magic and interactive TV machines. CodeWarrior 7 will also offer PowerPC 603 and 604 instruction scheduling and will include a copy of Microsoft Foundation Classes.

Boosting the languishing scripting market, Full Moon Software will ship Version 1.5 of its ScriptWizard AppleScript editor.

Meanwhile, Bare Bones Software will ship Version 3.5 of its text editor, BBEdit.

Cassady & Greene Inc. will offer updates to Conflict Catcher 3.0 and SnapMail 2.0, as well as some new games.

Apple and MacTech Magazine will take their highly successful Developer Central Pavilion and expand on the concept. The 60,000-square-foot area, located at the Bayside Expo Center, will have 50 vendor booths, demonstrations and free technical tutorials. That's also where you can be the first to pick up HyperCard 2.3.1 and get a chance to rub elbows with Apple's newest jolly, good Fellow, Guy Kawasaki. □

NITRO TO BLAST ONTO SHOW FLOOR

Although offering a familiar exterior to users, the new Power Mac 8500/120 is Apple's top of the line for digital video performance. Formerly known as Nitro, it sports video input and output as well as pathways for two separate video displays. As pictured here, it sits naturally next to the new $1,159 AppleVision 1710, a 17-inch multimedia display with built-in speakers and microphone.

Sharp, Telex hone panels

Active color LCDs hit new price low

By James Staten

Bringing the message to the masses can soon be done in more vibrant color using LCD-based presentation hardware available at this week's Macworld Expo in Boston from Sharp Electronics Corp. and due in the third quarter from Telex Communications Inc.

Both companies' products feature backlit infrared remotes as well as on-screen controls for adjusting image settings and running presentations. Sharp's remotes feature the ability to freeze a frame of video and enlarge it to fill the screen.

The $9,995 Sharp QA-2500 and the $3,995 QA-1200 are active-matrix panels with a contrast ratio of 150-to-1.

The QA-2500 has a 10.4-inch, 24-bit-color LCD with a maximum resolution of 1,024 by 768 pixels. It supports two simultaneous video sources: one computer and one video, including Super VHS. The system also features built-in stereo speakers.

The QA-1200 houses an 8.4-inch LCD with a palette of 1.7 million colors and 640-by-480-pixel resolution. It also supports two simultaneous sources — one computer and one video — and offers both front and rear projection. A $200 backlighting unit allows the device to be used as a desktop monitor.

Telex announced two new LCD panels and an LCD-based projector, all expected to feature active-matrix panels with a 100-1 contrast ratio.

The MagnaByte P170 projector will use a single-panel LCD and 410-watt quartz-halogen lamp to output 140 lumens, projecting images as large as 10 feet diagonally. It will measure 6.8 by 12 by 13.5 inches and weigh 13 pounds. Telex said the projector will have a palette of 16 million colors and a resolution of 640 by 480 pixels. The $4,995 P170 will support a single computer source, while the $5,495 P170v will be able to switch between two simultaneous sources, one computer and one video. Both models will feature built-in stereo sound.

The MagnaByte M3x desktop panel will have an 8.4-inch LCD with a palette of 16 million colors and a resolution of 640 by 480 pixels. It will weigh 5.9 pounds and feature built-in stereo speakers. The $3,695 M3x will support a single computer source, while the $3,995 M3xv will support one computer source as well as one simultaneously connected video source.

The $3,395 MagnaByte Mxe desktop panel will also use an 8.4-inch LCD, and it will offer a palette of 5.9 million colors. It will support a single computer source at a resolution of 640 by 480 pixels and will not offer audio capabilities. The unit will weigh 5.5 pounds.

Sharp Electronics Corp. of Mahwah, N.J., can be reached at (201) 529-8731; fax (201) 529-9636.

Telex Communications Inc. of Minneapolis is at (612) 884-4051 or (800) 828-6107; (612) 884-0043; multimedia@telex.com. □

nView projector to use mirrors instead of LCDs

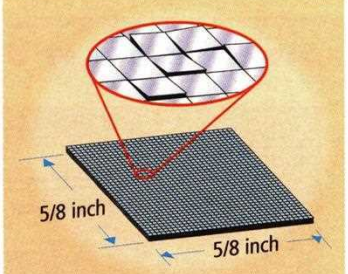
By James Staten

nView Corp. is drawing on new imaging technology to develop a projection system that promises brighter, more saturated colors and faster response times for video playback.

The Newport News, Va.-based company recently unveiled a prototype projector that incorporates Digital Light Processing (DLP) technology licensed from Texas Instruments Inc. of Dallas. DLP is based on a 0.625-inch-square semiconductor comprising more than 442,000 independent mirrors. The mirrors are switched by memory impulses stored beneath the tiny array, tilting plus or minus 10 degrees to reflect light into or away from an imaging lens and altering the color of individual pixels, TI said.

Jack Roberts, senior analyst for Dataquest Inc. of San Jose, Calif., said DLP offers significant advantages over LCDs. "Even the best LCDs are only 20 percent transmissive. [With the DLP system], light doesn't pass through it; it's reflected from it," he said.

TI's DLP technology



TI's Digital Light Processing technology is based on a Digital Micromirror Device Display Chip rather than an LCD. Each DMD contains 442,000 tiny mirrors, each separately controlled.

Roberts added that the TI technology can be manufactured much more cheaply than LCDs and can be made much larger.

nView said it expects to ship a series of panels using the new technology later this year; pricing has not been set.

TI said it has signed similar licensing agreements with Proxima Corp., Electrohome Projection Systems, Sony Corp. and In Focus Systems Inc. □

Reply's DOS card for 7100

By Nathalie Welch

Reply Corp. last week announced a new version of its DOS card tailored to the Power Mac 7100/80.

The company's line of DOS cards let users run Mac software alongside DOS and Windows applications. The new version, called DOS on Power Mac, plugs into the processor direct slot. Due in November, it will use a combination of 486 DX2/66, 486 DX4/100 and Pentium OverDrive processors.

DOS on Power Mac will be able to share up to 4 Mbytes of Mac RAM; alternatively, the card will be able to accommodate up to 64 Mbytes of on-board RAM. It will support eight-bit Super VGA graphics at 1,074 by 768 pixels and 24-bit color at 640 by 480 pixels.

The card's network capabilities will include token-ring; drivers for Windows for Workgroups and LAN Manager will be available later in the year. A parallel port and a second serial interface will also be available. Pricing will start at $695 based on configuration.

Reply Corp. of San Jose, Calif., is at (408) 942-4804 or (800) 955-5295; fax (408) 942-4897. □

STORAGE BEAT

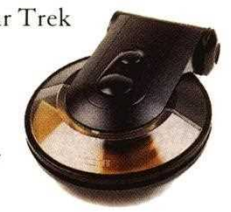
DiskGuard 1.5 locks IDE. ASD Software Inc. of Montclair, Calif., recently released an update to its $79.95 DiskGuard file- and disk drive-security software that expands drive support and hides protected volumes.

Version 1.5 can password-protect folders and partitions on both SCSI and IDE (Integrated Drive Electronics) devices; it also locks floppy disks. (Drives with IDE interfaces are used on some Performa and PowerBook models.)

The DiskGuard software provides two levels of security: master and user. Locked volumes are invisible in the Finder to secondary users and cannot be opened with third-party file-finding utilities, according to the company. The update, free to users of previous versions, can lock the System folder; its password-protected screen saver is compatible with Berkeley Systems Inc.'s After Dark modules. Phone (909) 624-2594; fax (909) 624-9574; asd@applelink.apple.com.

PowerPlug II unlinks SCSI chain. Adcon Corp. of Wilton, Conn., recently unveiled SCSI PowerPlug II, the latest version of its termination device that lets Mac users add and remove SCSI devices without shutting down the system.

The company said the new model's redesigned circuitry permits hot swapping while file sharing is active. It also includes a control panel that supports swaps on a single SCSI address for mechanisms with different driver software. Phone (203) 761-0651; fax (203) 761-1444.



Elecom cleaner zaps grime. It's not a Star Trek spaceship wannabe; it's Elecom Computer Products Inc.'s Revolution CD cleaner.

The $19 product removes dust and fingerprints from a CD in 30 seconds, according to the Cerritos, Calif.-based company. Phone (310) 802-0077 or (800) 757-0077; fax (310) 802- 3837.

Storage bits and bytes. Mail-order drive vendor **APS Technologies Inc.** of Kansas City, Mo., was recently awarded a patent for DATerm, its digital active-termination technology. The circuitry is used in APS' hard drives and flavors of its SCSI Sentry external termination plugs. ... Shelf space, or the lack thereof, is a problem facing the CD-ROM publishing business, according to the seventh edition of the Optical Publishing Industry Assessment by **InfoTech Inc.** of Woodstock, Vt. Although the worldwide installed base of CD-ROM drives will reach more than 49 million in 1995, computer stores are not giving enough space to the booming number of titles. Unlike large chain bookstores, which stock up to 100,000 print titles, most computer stores carry fewer than 500 CDs. ... **Toray Optical Storage Solutions** of San Mateo, Calif., now has a World-Wide Web page at http://www.toray.com.

— By David Morgenstern

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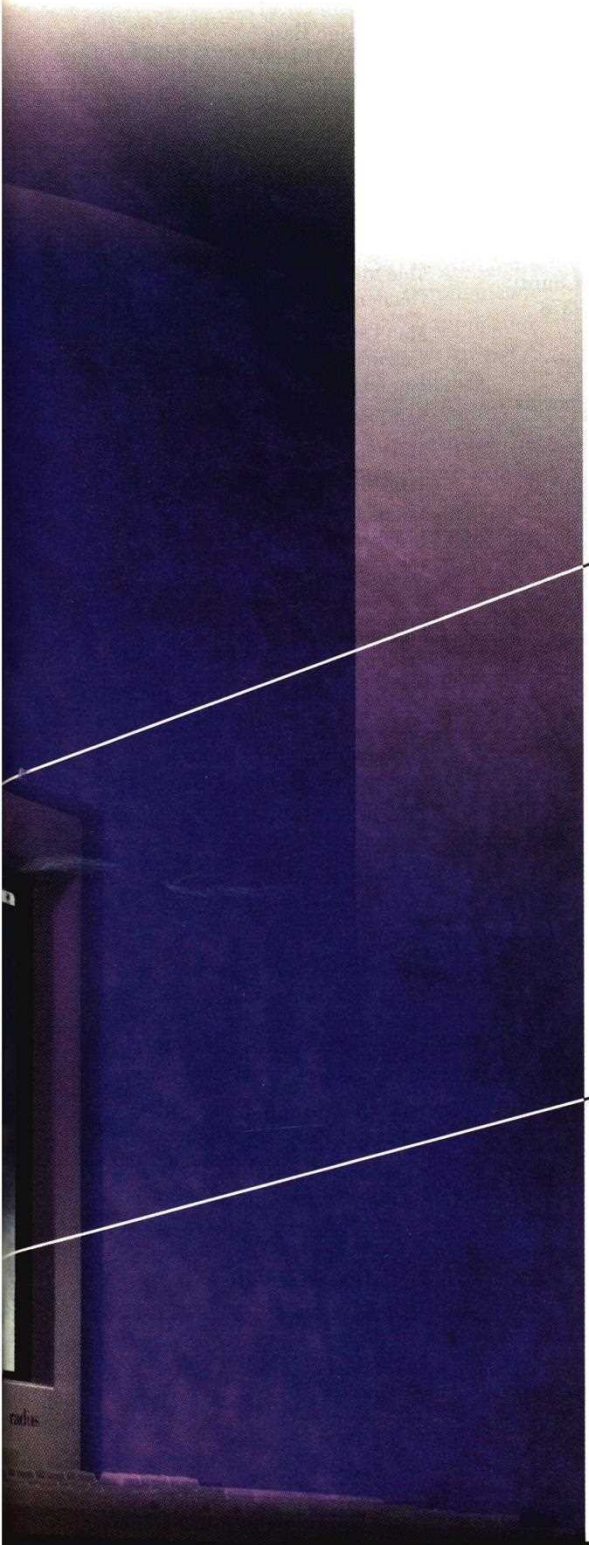

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File utilities help users cross platforms

By MacWEEK staff

Offering cross-platform users a hand with Mac data conversion, three vendors recently introduced new and updated file utilities.

▶ **Software Architects Inc.** released Here & Now, an $89.95 file-exchange program for Intel-standard PC systems that resembles the company's DOS Mounter for the Mac.

The software mounts Mac-formatted removable media, including floppy, SyQuest and magneto-optical, and lets the system use it as an ordinary DOS volume. It shortens Mac file names automatically. A File Manager window lets users view file names in both short and long versions.

Here & Now also offers PC users file mapping in which Mac files are automatically matched to an appropriate PC application and opened. The software requires MS-DOS 3.3 or higher or Windows 3.1 or higher.

▶ **DataViz Inc.** shipped Version 3.0 of Conversion Plus for Windows, its $149 cross-platform mounting and translation suite.

The update adds new translators for graphics files in TIFF, JPEG, GIF (Graphic Interchange Format), BMP (Windows Bitmap), PCX or EPS format as well as a variety of Mac-based productivity applications.

DataViz also added a file-preview feature that allows users to quickly view a file before converting it.

The upgrade costs $39.95 to users of previous versions.

▶ **Digital Instrumentation Technology Inc.** upgraded its TransferPro software, which lets users of IBM RS6000 and Data General AViiON Unix workstations read and write Mac and DOS files.

Release 2 Version 8.3 of the $409 software offers functions for browsing, copying, moving, creating and renaming files and directories. Users can initialize Mac and DOS removable media and set up character-filter and file-extension settings.

Software Architects Inc. of Bothell, Wash., can be reached at (206) 487-0122; fax (206) 487-0467.

DataViz Inc. of Trumbull, Conn., can be reached at (203) 268-0030 or (800) 733-0030; fax (203) 268-4345.

Digital Instrumentation Technology Inc. of Los Alamos, N.M., can be reached at (505) 662-1459 or (800) 467-1459; fax (505) 662-0897; tpr-request@dit.com. □

Deltis PowerMO picks up pace of Olympus line

By David Morgenstern

Olympus Image Systems Inc. this week is slated to deliver a high-speed addition to its Deltis line of magneto-optical drives.

The $599 Deltis PowerMO 230 is based on a 3.5-inch mechanism that supports cartridges in capacities of 230 and 128 Mbytes. The new mechanism boosts performance via an increased spindle speed of 4,500 rpm; an older model, the Deltis 230MO, has a spindle speed of 4,200 rpm.

Olympus said its new drive features a sustained data transfer rate of about 2.6 Mbytes per second. It has an average access time of 26 milliseconds. The drive uses a 1-Mbyte RAM cache.

The Fast SCSI-2 system includes digital active termination and ships with a cartridge, driver software and a two-year warranty, Olympus said.

"PowerMO is a good midlife kicker for the 3.5-inch MO market," said industry analyst John Freeman with Strategic Marketing Decisions of Los Gatos, Calif. He said falling prices have helped the MO market; prices are dropping at a rate of about 50 percent per year. He cited Olympus' 230MO, introduced a year ago at $1,195, which now costs $499.

Olympus Image Systems Inc. of Melville, N.Y., can be reached at (800) 347-4027; fax (516) 844-5353. □

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Samsung, Sampo and Sony to steal the show with screens

By James Staten

Extending Mac users' screen horizons, Samsung Electronics America Inc., Sampo Technology Inc. and Sony Electronics Inc. will display new monitors at this week's Macworld Expo in Boston.

All the devices comply with the Energy Star standard for low power consumption and the MPR II standard for electromagnetic emissions; they feature anti-glare and anti-reflection coatings as well as tilt-and-swivel bases.

▶ **Samsung** will ship two new displays based on 17- and 15-inch Hitachi tubes. The $999 SyncMaster 17GLsi has a 15.75-inch image area and 0.26mm dot pitch. It supports Mac resolutions up to 1,152 by 870 pixels. The monitor provides digital on-screen controls for horizontal and vertical size and position, pincushion, trapezoid, tilt, color temperature, hue, and saturation.

The $399 SyncMaster 15GLe has a 13.8-inch image area and 0.28mm dot pitch. Its maximum Mac resolution is 832 by 624 pixels. Front-panel controls let users adjust image size and position.

▶ **Sampo** will show off its $429 AlphaScan 15mx display, which is based on a Hitachi 15-inch flat square tube with an image area of 14 inches. The display has a maximum Mac resolution of 1,024 by 768 pixels and a dot pitch of 0.28mm. Its analog controls allow users to adjust image size and position.

▶ **Sony** will ship the $3,950 Multiscan TC Trinitron, a high-end 20-inch display with a 19.1-inch image area. It has a maximum Mac resolution of 1,152 by 870 pixels and is fully compliant with the Swedish TCO'92 standard for power consumption and electromagnetic emissions. The display automatically adjusts digital uniformity and on-screen color temperature. It supports ColorSync 1.0 and generates its own device profile for use with compatible color-management systems.

Samsung Electronics America Inc. of Ridgefield Park, N.J., can be reached at (201) 229-4000 or (800) 933-4110; fax-back (800) 229-2239.

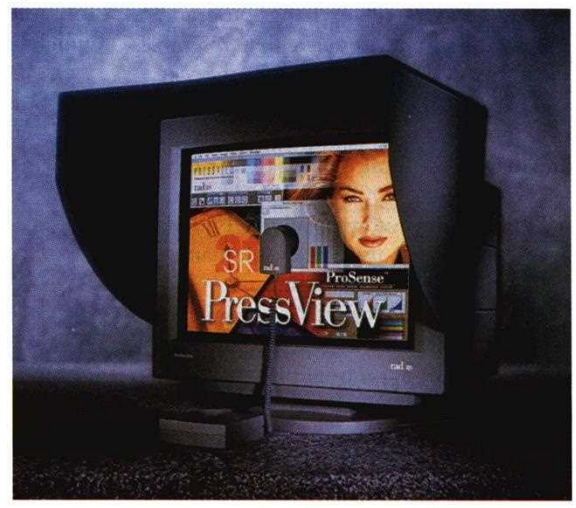
Sampo Technology Inc. of Norcross, Ga., is at (404) 449-6220; fax (404) 447-1109.

Sony Electronics Inc. of San Jose, Calif., can be reached at (201) 930-7669 or (800) 352-7669; sel_contact@sel.sony.com; http://www.sel.sony.com. □

PressView system eyes image editing

By James Staten

Radius Inc. will pursue image-editing professionals at Macworld Expo in Boston this week with its latest display system, the PressView 21 SR.



Setting its sights on graphics professionals, Radius has designed its PressView 21 SR to maximize color fidelity.

The $3,999 system is built around the company's Super Resolution 21-inch PressView monitor, which contains a Mitsubishi DiamondTron tube within a neutral gray cabinet. The display is fitted with Radius' ColorShield hood and Stealth Coat to block and absorb ambient light as well as any colors reflected from the user's clothing or neighboring objects.

The display has a 19.7-inch image area and 0.3mm dot pitch, and it supports Mac resolutions of up to 1,600 by 1,200 pixels. Its electron guns and amplifier gains can be adjusted via software controls to provide accurate color translation and set multiple white-point settings, including the D50 setting used in the publishing industry, Radius said.

Users can also adjust display characteristics, including gamma, intensity, size, position, convergence, pincushion and moiré, and all settings can be password-protected.

Included is a collection of Adobe Photoshop look-up tables for color translation between CMYK and RGB color spaces for accurate color matching among press configurations, including SWOP (Specifications for Web Offset Publications), Euroscale and SNAP (Specifications for Non-heat Advertising Publications) newsprint.

The PressView system also includes the Radius ProSense colorimeter, which lets users precisely measure the color of the display's phosphors and white point. When used with the Radius Thunder family of graphics boards, the ProSense draws on the cards' 30-bit-color DACs (digital-to-analog converters) to calibrate the monitor.

Radius Inc. of Sunnyvale, Calif., is at (408) 541-6100 or (800) 227-2795; fax (408) 541-6150; support@radius.com. □

Boxes extend reach of peripherals, CPUs

By David Morgenstern

Cybex Corp. this week will introduce new products that can extend the reach of input devices and displays as well as reduce desktop clutter for network managers.

The Mac Companion is a $595 set of transmitter and receiver boxes that let users directly access a CPU from a distance of up to 600 feet. The company said the product can provide a simple terminal extension in a business office and will help isolate hardware in noise-sensitive or hazardous environments, such as recording studios or shop floors.

Users can attach a 24-bit-color monitor, keyboard and mouse to the receiver, which is connected to the host Mac. Only one such setup is active at a time.

A monitor, keyboard and mouse connected to the front of the 4xP can control up to 12 attached Intel-standard, Sun or Mac servers.

The company offers extension cables in multiple twisted-pair and fireproof plenum versions. The cables come in set lengths of up to 250 feet; Cybex said custom factory-tuned cables can reach up to 600 feet.

The AutoBoot Commander 4xP is a 12-slot expansion chassis that connects desktop systems and servers across platforms.

The $795 device lets a single display, mouse and keyboard control up to 12 attached Intel-standard, Sun or Mac servers.

The unit features ports for ADB input; serial and PS/2 mice; and PC, Sun and PS/2 keyboards. It automatically converts any combination of monitor and input devices for use with the appropriate platform. Each server requires a $185 interface card.

The 4xP can also support up to four remote users; each remote connection requires a $300 interface. The system can be set to restart attached computers after a power failure, Cybex said.

Cybex Corp. of Huntsville, Ala., is at (205) 430-4000; fax (205) 430-4030. □

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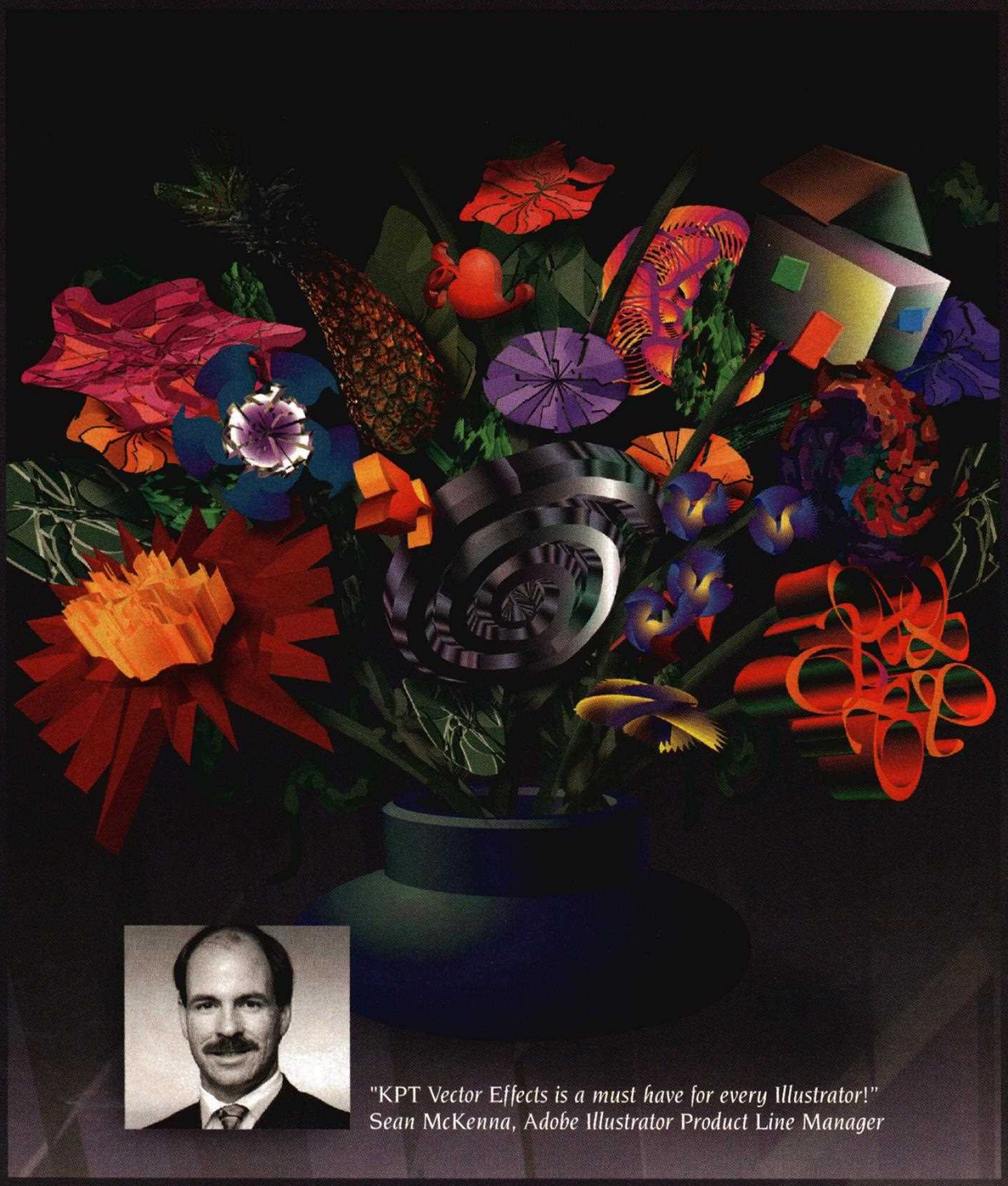

"KPT Vector Effects is a must have for every Illustrator!"
Sean McKenna, Adobe Illustrator Product Line Manager

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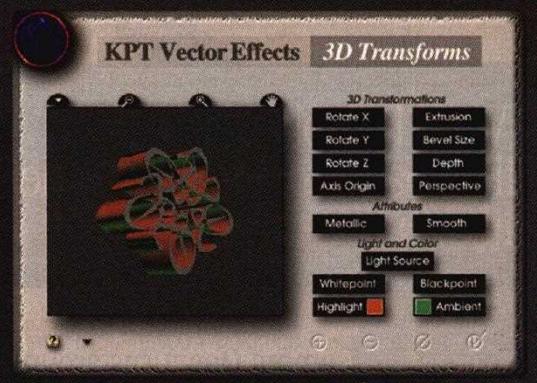

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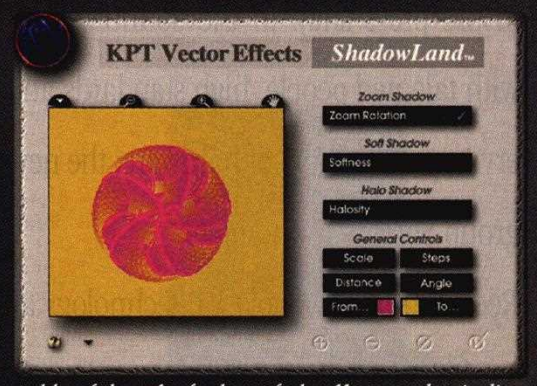
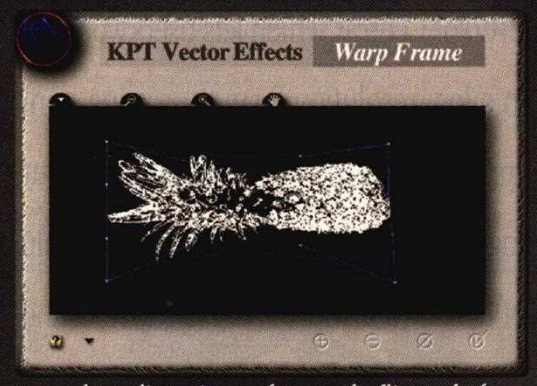


Add subtle, soft shadows, halo effects and spiraling zoom shadows in a single move instead of dozens of tedious steps.



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Accelerated for Power Macintosh

In fact, they're "the ultimate addition to FreeHand," says James Von Ehr, Macromedia Vice President and General Manager.

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–Vince DiPaola

Vince DiPaola,
V.P. Technology, Gamma One,
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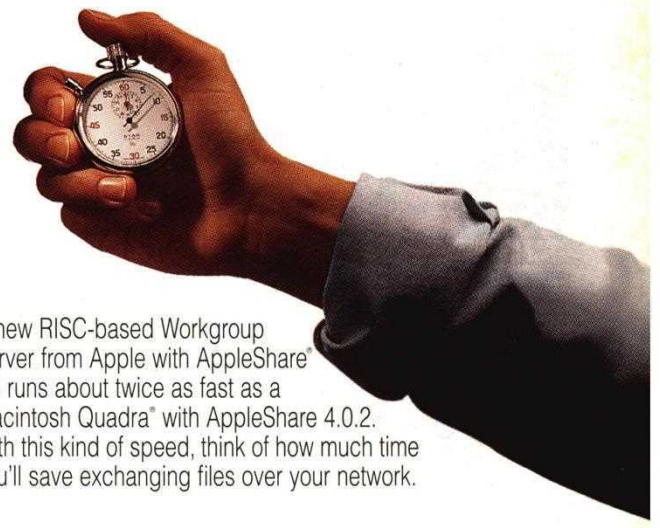
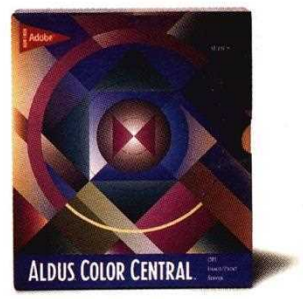


A new RISC-based Workgroup Server from Apple with AppleShare® 4.1 runs about twice as fast as a Macintosh Quadra® with AppleShare 4.0.2. With this kind of speed, think of how much time you'll save exchanging files over your network.



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Video suite on single PCI card

By Carolyn Said

Data Translation Inc. will become the first company to debut a PCI-based digital video system for the Mac when it announces at Macworld Expo this week Vincent, a card that will provide the real-time video editing and multitrack audio mixing for the company's Media 100 system. Data Translation has also upgraded the Media 100 software with new audio and video capabilities.

Vincent, a single card that will replace the two NuBus cards currently used, has a dual-processor design composed of a 32-bit, 40-Mflop (millions of floating-point operations per second) Texas Instruments digital signal processor and a 32-bit 40-MHz 68030. Very large-scale integration circuits will allow for incorporating Betacam SP component inputs and outputs and support accelerated audio programming. Field programmable circuits will allow easy upgrades to hardware from software. The card's implementation of M-JPEG (Motion JPEG) will allow video compression at ratios lower than 4-to-1, the company said.

Data Translation said the single-

See Media 100, Page 20

Specular ships Infini-D 3.0

Spline-based modeling added

By Carolyn Said

Transforming its 3-D application, Specular International Ltd. this week at Macworld Expo will ship Version 3.0 of Infini-D, which integrates new modeling and rendering tools.

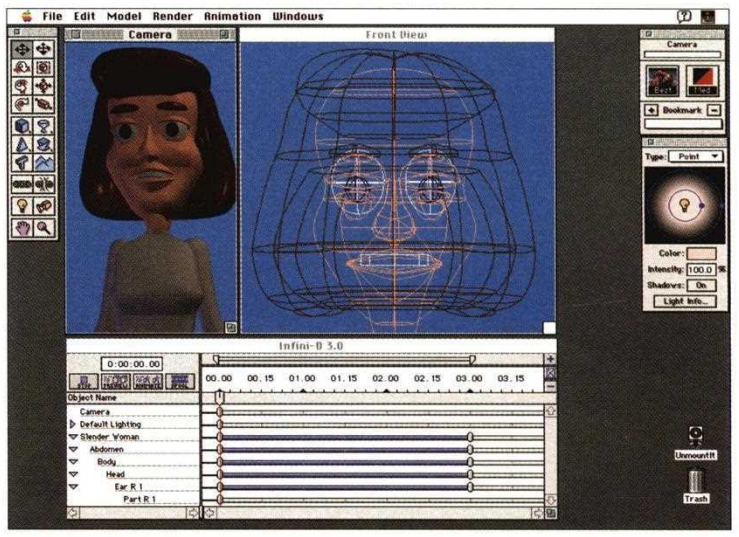
Infini-D 3.0, priced at $899, includes a new path-profile, spline-based modeling system. Using spline tools, users can create a profile or cross-section and extrude it along a 3-D spline path. By placing multiple profiles of varying shapes along a path, users can create sophisticated objects, the company said. The software comes with an object library with dozens of predefined shapes. Other modeling features include preset and user-definable window layouts, grids, rulers and guides.

The new version can also animate a model's spline paths over time, so users could create motion effects such as dolphins swimming or flags waving.

A new animation sequencer edits the individual properties of an object, such as rotation, scale and surface. A velocity graph controls the speed and acceleration of movement.

The upgrade lets users see motion paths for multiple objects. Users can edit motion visually by

See Specular, Page 20



Specular's Infini-D 3.0 will offer a new spline-based modeler. A new Light Fall Off effect (right) allows light intensity to diminish over time.

FOCUS ON GRAPHICS APPS

QuickDraw 3D enables users to spin a 3-D Web

By Carolyn Said

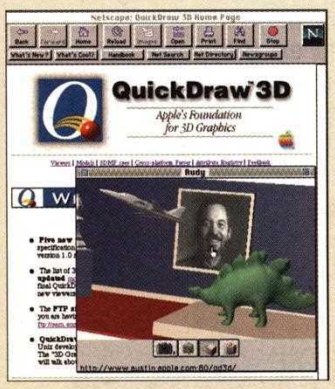
When Apple releases QuickDraw 3D this week, it won't just be putting a 3-D architecture on Power Mac desktops: It will be opening up 3-D virtual worlds in cyberspace, where users from multiple platforms can access them.

The company plans to release over the Internet this week a free cross-platform viewer that can read files in 3DMF (3-D metafile format), QuickDraw 3D's underlying file type. In combination with the ability to embed URLs (universal resource locators) in 3DMF files, this should help to rapidly change the landscape of the World-Wide Web to include more navigable 3-D pages, observers said.

Meanwhile, other developments, particularly the increasing acceptance of Virtual Reality Markup Language (VRML) for displaying 3-D data on the Web, are also propelling Internet content and navigation into the third dimension.

"3-D [on the Web] will provide both a new media type for content and a new navigational

See Focus On, Page 20



This 3-D scene, created in Strata Studio Pro and saved as a 3DMF file, contains embedded URLs for Web navigation.

After Effects gains split personality

By Carolyn Said

Adobe Systems Inc. is jazzing up its After Effects 3.0 video special-effects program with new and enhanced special effects and better integration with the company's image-creation and image-editing applications. In a new, two-tiered distribution strategy, Adobe will offer a higher-end version for film and broadcast professionals.

After Effects 3.0, due by September, will be able to directly read and write Adobe Photoshop 3.0 files with all layers, transparency and transfer modes intact. Resolution-independent rendering of Adobe Illustrator files will allow After Effects users to maintain vector information with imported Illustrator files, which they can then scale, rotate and manipulate. After Effects will add path tools like those in Illustrator and Photoshop for creating Bezier masks over media elements.

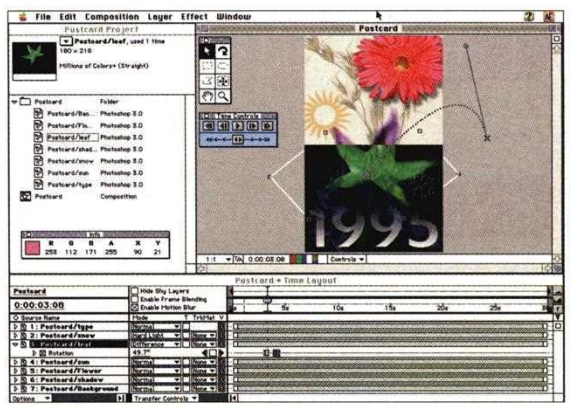
Motion Control and Time Remapping have been separated into two components, allowing design of more-complex and natural motion, the company said.

After Effects 3.0 will postpone all processing until the final rendering, optimizing processing time and reducing flaws from multiple processing, according to Adobe. Users will be able to simultaneously render several versions of each composition at different resolutions.

The basic After Effects 3.0 package will be sold through retail channels at $995 and will include a package of 50 special-effects plug-ins.

A higher-end version, After Effects 3.0 Production Bundle, will be available through value-added resellers at $1,995, the program's current price. It will include plug-ins aimed at broadcast and film professionals: Keying Pack, previously sold separately for $695; Motion Pack; Distortion Pack; and Device Control Pack.

Adobe Systems Inc. of Mountain View, Calif., can be reached at (415) 961-4400, (800) 833-6687; fax (415) 9611-3769. □



Users of Adobe After Effects 3.0 can import Photoshop 3.0 files with layer, transparency and transfer modes intact and can then animate the layers individually.

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FOCUS ON

From Page 18

paradigm," said Terry Baker, president of Template Graphics Software Inc. in San Diego. "There's so much information on the Net; a 3-D visual representation is easier to navigate than text. People can walk or fly through virtual worlds to get where they want to go." A 3-D structure on the Internet could also be used for chat areas, providing shared virtual spaces for conversation and other user interaction, such as game playing.

Compact files

As with many media types, bandwidth is a gating factor for 3-D Web pages. Both VRML and 3DMF address this by producing compact, yet data-rich, files. "3DMF creates a 100-Kbyte file where DXF [Drawing Interchange File, the only previous cross-platform 3-D file format] would create a 2-Mbyte file," said Larry Rosenthal, owner of Cube Productions Inc. in New York. Similarly, "VRML provides very efficient encoding for 3-D graphics," Baker said.

"A 3-D visual is easier to navigate than text."
— Terry Baker

VRML, whose development is being spearheaded by Silicon Graphics Inc. of Mountain View, Calif., is currently the leading format for 3-D on the Web, but it has been inaccessible to Mac users. Template plans a September release for the Mac version of WebSpace, a $49 helper application for Web browsers that will display 3-D VRML data. Versions of WebSpace are already available for Unix, Windows NT and Windows 95.

Mac users who want to save files in VRML format can do so with Strata StudioPro 1.75, due this week, and with an upcoming version of Virtus Corp.'s Walkthrough.

Apple said it will support both file formats. "Our viewer can parse both VRML and 3DMF files," said John Alfano, digital space product manager at Apple. "Basically, we're agnostic. If VRML gets popular, great. If 3DMF gets popular, even better."

Although QuickDraw 3D will run only on Power Macs and eventually Windows machines, 3DMF, like PICT or TIFF, is expected to be a cross-platform file format. Mac users who want to create 3DMF files will be able to choose from about 40 3-D, CAD and graphics applications that will be QuickDraw 3D-aware by fall. Observers said wide availability of QuickDraw 3D applications should spawn plenty of 3DMF graphics for the Internet and elsewhere.

"QuickDraw 3D will make it much easier for companies producing Web navigators to target the Mac OS," said Jim Boyd, corporate technology liaison at Strata Inc. of St. George, Utah.

There are several other options for creating "virtual world" experiences on-line. Apple's QuickTime VR lets users create navigable panoramic scenes. The company offers a free QuickTime VR viewer on-line, and last week signed an agreement with Netscape Communications Corp. of Mountain View, Calif., to bring QuickTime and QuickTime VR support to Navigator, Netscape's Web browser. Users said this technology, which produces larger files than 3DMF or VRML, is less practical for on-line navigation but still viable for downloadable files.

Faux 3-D

There is also the option to create what Rosenthal calls "fake 3-D." "Putting up a consecutive group of rendered 3-D images to navigate through — the Myst approach to 3-D — is an approach that minimizes the download times," he said.

Within a year the Web should have more-lifelike terrain. "You'll be able to walk around a gallery, double-click a picture on the wall to get information or bounce to another virtual world, go into a theater and watch movies that might be playing," said Strata's Boyd. "You'll have a virtual 3-D world in cyberspace where you can interact like in any natural world." □

Media 100

From Page 18

card design minimizes the risk of thermal or mechanical failure that accompanies daughtercard or multiple card designs. PCI's increased data throughput will eventually allow the card to offer real-time titling, real-time switcher and DVE (Digital Video Effects), multiple video streams, full-motion uncompressed video, and higher-quality video, according to Patrick Rafter, Data Translation minister of information.

The upgraded Media 100 system with the Vincent card will ship this month for $10,995; an optional package for special effects and edit-decision lists is $3,995. Until Sept. 29, owners of Avid Technology Inc.'s Media Suite Pro can purchase Media 100 with the optional package for $4,995, a 65 percent savings.

Data Translation has upgraded the Media 100 software to Version 2.5; the upgrade will ship with new Media 100 systems this month and will be sent free to customers who have service contracts.

Version 2.5 will offer eight real-time 16-bit audio tracks, mute and solo buttons for each track, and audio node editing. Real-Time ColorFX will allow users to adjust tint, saturation, brightness, contrast and posterization in real time, as well as to combine various adjustments to create and save custom effects. The software will include a new selection of accelerated special effects, including push, slide, inset, diagonal wipe, radial wipe and Venetian blinds.

An Insert Edit-to-tape feature will let users assemble and insert edits with frame accuracy to videotape recorders. Improved bins will give easier sorting and enhanced list mode.

Data Translation Inc. of Marlboro, Mass., can be reached at (508) 460-1600 or (800) 832-8188; fax (508) 481-8627. □

Specular

From Page 18

adjusting the paths.

A new Light Floater tool gives users easier access to light controls. The update has a new lighting type, called distant lights, that simulates sunlight via parallel rays.

Users can apply images or textures to 3-D objects as "decals," which move and animate in sync with the object.

Version 3.0 also offers a more intuitive interface and has been optimized for the PowerPC 604 processor, Specular said.

Upgrades are $179; upgrades for five or more packages are $89 each.

Specular said a Version 3.1 update, slated for an October release, will add support for several features of Apple's new QuickDraw 3D architecture, including the 3-D metafile format, copy and paste to the Clipboard, and interactive rendering animation preview in the modeler.

Version 3.1 will be free to users of Version 3.0 and $179 to users of Version 2.6 and earlier.

Specular International Ltd. of Amherst, Mass., can be reached at (413) 253-3100 or (800) 433-7732; fax (413) 253-0540. □

GRAPHIC DETAILS

- **Adobe releases ScreenReady**
- **ExecuTable for PageMaker**
- **CadMover goes native**

Adobe Systems Inc. of Mountain View, Calif., has released ScreenReady, its graphics utility for simplifying and speeding the process of bringing files from desktop publishing and illustration applications into multimedia authoring programs. It is $99 until Aug. 15 and $199 thereafter. Phone (800) 521-1976. ... **ExecuStaff Composition Services** of Campbell, Calif., recently shipped an automatic table formatting plug-in for Adobe PageMaker. The $239 ExecuTable includes automatic calculation of columns and gutters, predefined straddle heads, and automatic text wrap in table layout. Phone (408) 559-8400. ... **Kandu Software Corp.** of Falls Church, Va., has released a Power Mac-native version of its CadMover translation suite for moving vector-based graphics, such as Illustrator and AutoCAD files, among Mac, Windows and Unix formats. Phone (703) 532-0213. ... Phoenix-based **Mutoh America Inc.'s** new cordless pens for Kurta graphics tablets are made to seem more like writing pens. The KCP4 CAD Writing pen is nonpressure-sensitive and costs $70; the KCP5 Artists pen features 256 levels of pressure and lists at $220. Phone (602) 276-5533. ... **Eastman Kodak Co.** now has Power Mac-native driver software for all of its professional digital cameras. According to the Rochester, N.Y.-based company, the new drivers speed image downloading time by up to five times. Phone (800) 235-6325. ... For low-cost photo editing and painting, **MacSoft** of Bakersfield, Calif., a division of the WizardWorks Group Inc., is now offering PhotoMaker. The $39.99 application, which accepts Photoshop filters and comes with 100 stock photos, offers such features as mask, feather, anti-alias, convolute, rotate and distort; retouching features include sharpen, colorize and contrast. Phone (612) 559-5140. ... **Polaroid Electronic Imaging Systems** of Cambridge, Mass., has cut the price of its SprintScan 35, a slide and film scanner, to $1,995, a $500 reduction. Phone (800) 432-5355. ... Norcross, Ga.-based **BeInfinite Inc.** is offering a freeware filter for Adobe Illustrator and Macromedia FreeHand. As its name implies, Smart Remove Points allows users to remove geometrically redundant points. Phone (800) 554-6624. ... **Total Integration Inc.** of Palatine, Ill., has released Schawk Roundup 2.0, a utility that evaluates a file and lists all missing components required for printing. The $99 package works with Adobe Illustrator and Photoshop, FreeHand, QuarkXPress, PostScript, and EPS files. Phone (708) 776-2377. ... **Alien Skin Software LLC** of Raleigh, N.C., is now shipping The Black Box 2.0, a collection of 10 Photoshop filters with new additions such as Inner Bevel, Carve, Cutout and Motion Trail. Priced at $119, the collection takes advantage of Photoshop 3.0's layers feature. Upgrades are $29. Phone (919) 832-4124. □

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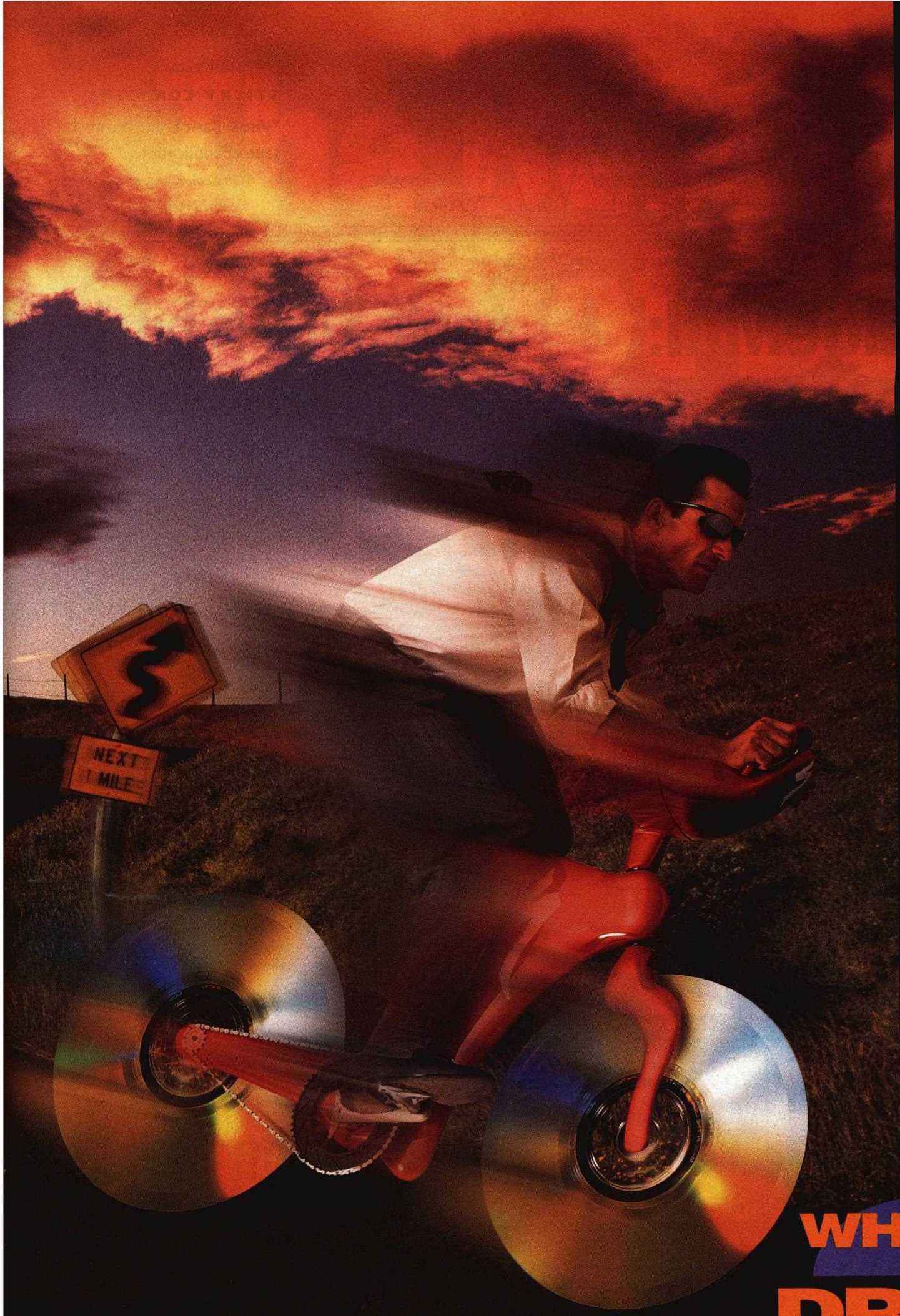

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STICKY COMMENT

"Visual Basic is like the duct tape of applications."

— Alan Schwartz, vice president, Micromega Systems Inc.

Ceneca's PageMill: WYSIWYG in the Web

SiteMill option also manages links

By James Staten

At Macworld Expo in Boston this week, Ceneca Communications Inc. will unveil a groundbreaking World-Wide Web authoring system with site-management options.

Due to ship in September, Ceneca's PageMill is a $195 WYSIWYG editor that will create HTML (Hypertext Markup Language) pages like a word processor and generate clickable image maps.

In October, Ceneca will release SiteMill, a site-management tool that will automatically update all documents at a site when any link is changed; it will incorporate PageMill and be priced at $795.

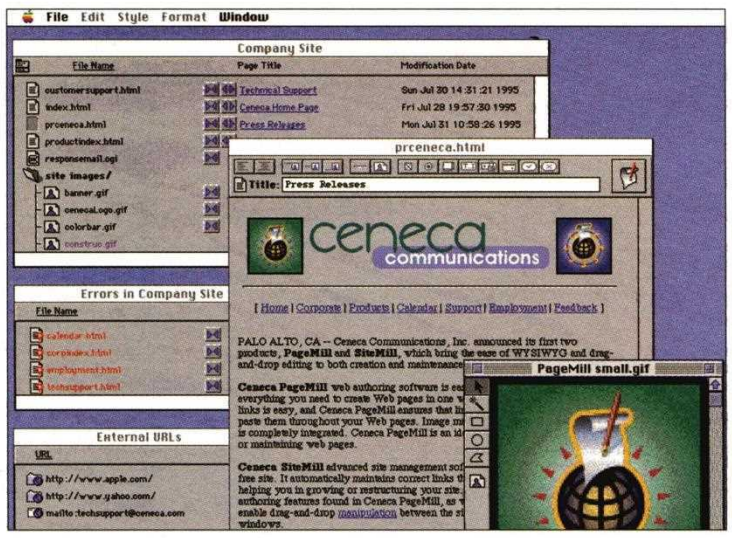
John O'Fallon, director of engineering for Maxum Development of Streamwood, Ill., said that PageMill fits his description of what an HTML editor should be. "This is it," he said. "Anyone who has spent any time on the Web is going to feel right at home building HTML pages with PageMill."

The program's interface will resemble a Web browser and support drag-and-drop editing. Users will be able to drag links, images and text onto a Web page or drag items to new positions on the page. Links can be created between documents via dragging as well. The program will generate image maps, resize them on the fly, make graphical backgrounds transparent and automatically convert PICT files to GIF (Graphic Interchange Format), Ceneca said.

PageMill will also create forms containing pop-up lists, radio buttons, images and text boxes. A database CGI (Common Gateway Interface) will be needed to accept any data input by users.

The editor will support all

See Ceneca, Page 28



Ceneca's PageMill is an HTML editor that looks like a Web browser and supports drag-and-drop creation of text-and-graphics World-Wide Web pages.

Apple, Oracle pitch Power Objects tool

Developers say app is needed

By Clifford Colby

At a ceremony more reminiscent of a motion-picture premiere than a typical announcement of a client-server tool, Oracle Power Objects made its debut last month.

Amidst the props, stagehands and animated clips at San Francisco's Center for the Arts, Oracle Corp., Apple and IBM Corp. said the object-oriented development tool was ready for Mac OS and Windows machines.

Contrary to previous company announcements, Oracle did not have the Power Mac version ready for release this summer. Instead, it is shipping the 680x0 version and plans to have the PowerPC version finished by the end of October, with OpenDoc compatibility and Open Database Connectivity hooks also due then.

"I think it is high time someone takes on [Microsoft Corp.'s] Visual Basic," said Christine Comaford, president of Corporate Computing International Inc., a client-server consulting firm in Bannockburn, Ill. "Power Objects is a good tool."

Barry Johnson, principal of Dynamic Information Systems, a software-development company in Minneapolis, said he is looking forward to Power Objects' features. "There has never really been for the Mac a strong client-server tool for accessing SQL databases using an open architecture," Johnson said.

"It allows me to keep the Mac as my primary development machine. I still don't need a Windows machine on my desk."

David Nagel, senior vice president of Apple's Worldwide Research & Development division, said Apple has signed an agreement with Oracle to sell Power Objects through Apple channels. Nagel said his company will write the documentation and assemble

See Objects, Page 28

Pages land on Mac desktop

By Nathalie Welch

Mark/Space Softworks this week will add a slew of new gateways to its PageNOW! software, giving users the ability to send pages from within a wide range of Mac applications.

On display at this week's Macworld Expo in Boston, PageNOW! 1.5 starts in a $119 Personal Edition, which sends pages from a modem-equipped Mac. A $495 Workgroup Edition lets up to 30 users in one AppleTalk zone send pages via a modem-equipped paging server; a $995 Enterprise Edition works with unlimited zones and users.

New e-mail gateways let users send pages from AT&T Mail, CE Software Inc.'s QuickMail, Microsoft Mail and Apple's PowerTalk; new fax gateways work with Supra Corp.'s FAXcilitate, Delrina Corp.'s FaxPro and Global Village Communication Inc.'s GlobalFax.

The upgrade also lets users send pages from Now Software Inc.'s Now Up-to-Date, ACI US Inc.'s 4th Dimension database and StarNine Technologies Inc.'s ListStar mailing list application.

See Paging, Page 28

FOCUS ON INTERNET

Porn spurs new filtering tools

By James Staten

While the future freedom of the Internet is debated in Congress and the media, the software industry is shipping products that may reduce much of the public concern about unsavory places in cyberspace. These parent-driven changes in client tools and server standards are likely to alter the software available to businesses.

SurfWatch Software Inc. of San Jose, Calif., has garnered most of the attention with its $49.95 SurfWatch for Mac and Windows. The program works by monitoring the TCP/IP data stream looking for URLs (universal resource locators) listed in its database of sexually explicit Internet sites. When users attempt to go to URLs on the list, their access is blocked. SurfWatch said its database is revised daily and that updates are sent to registered users once a month.

For more timely protection from new sites, which seem to crop up every day, SurfWatch later this year will ship SurfManager, a plug-in tool that will allow parents or network administrators to manually add or delete sites from the list.

America Online Inc. of Vienna, Va., in late June announced plans to incorporate SurfWatch into the parental controls of its on-line access applications. CompuServe Seattle (formerly Spry Inc.) said it plans to provide similar blocking technology in a kids' version of its Internet in a Box.

For corporate and educational sites, FireFox Inc. of San Jose,

See Focus On, Page 26

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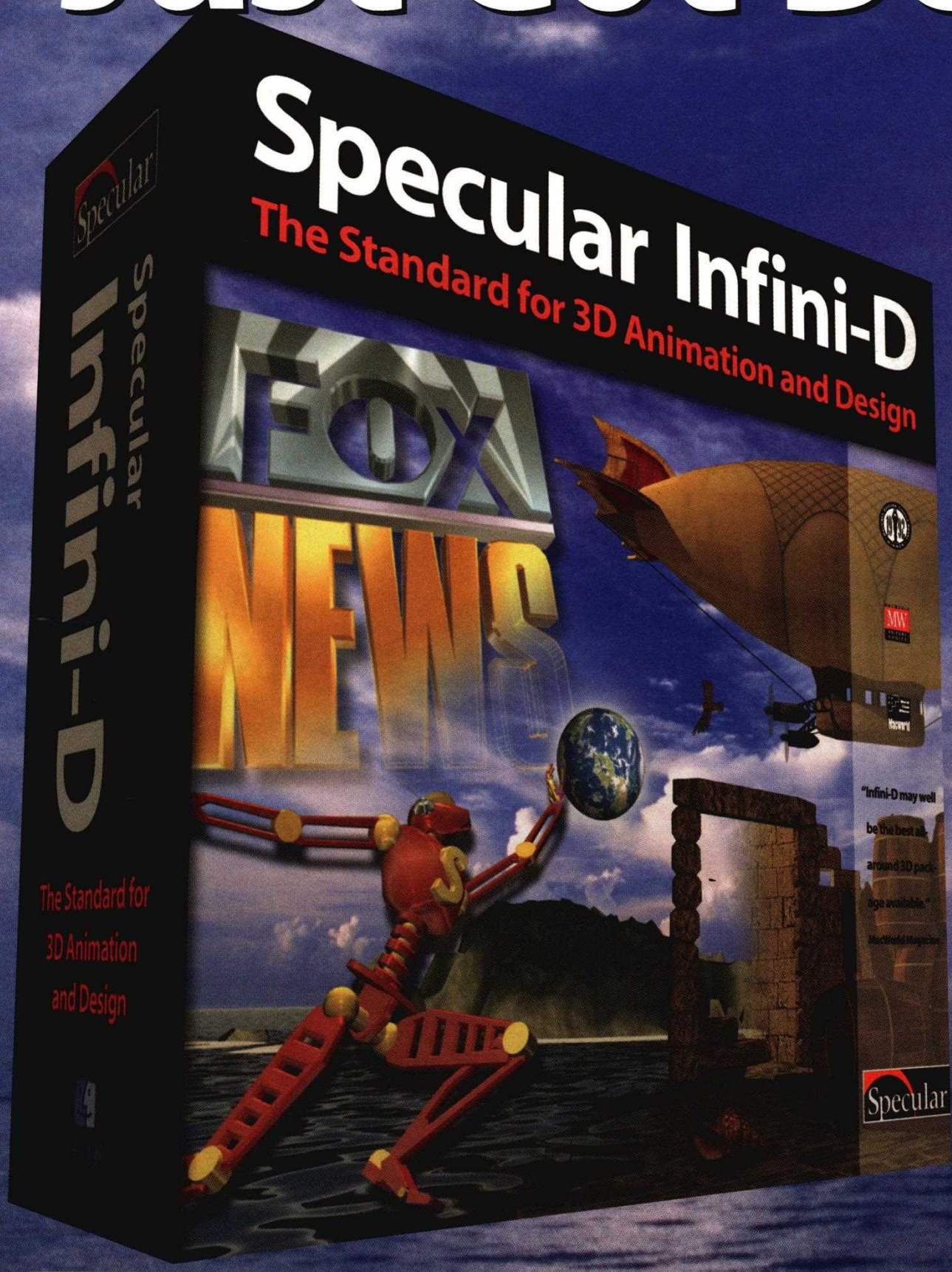

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FOCUS ON
From Page 24

Calif., offers NOV*IX, priced at $1,425 for five users. While not designed solely to control access to the Internet, it does allow an administrator to limit users to specified sites (see story below).

While users laud the capabilities of these products, critics such as Senator J.J. Exon (D-Neb.), co-author of the Exon amendment aimed at banning obscene and indecent material on the Internet, contend that they are not foolproof.

"I liken the Internet to the open stacks in a library," said Bill Duvall, CEO of SurfWatch. "There is a lot of great stuff in there, and if you search through the shelves long enough, you will find something inappropriate for children."

Underground World-Wide Web pages and pornographers' software libraries that hop among several Internet addresses to avoid detection by authorities have been a topic of discussion on the Senate floor in recent weeks. "There isn't a heck of a lot we can do from a blocker's standpoint about these underground sites, and in all likelihood children aren't likely to find them anyway," Duvall said.

To many, that answer isn't good enough. SafeSurf, a nonprofit parents' organization based in Van Nuys, Calif., said the solution is to limit children's access by transferring the responsibility to administrators of Internet sites. To that end, the organization has developed a set of HTML (Hypertext Markup Language) tags that identify a site as appropriate for children.

"We have about 1,000 sites that are using the tags now and are working with software companies, including TeacherSoft [Corp.] and Spyglass [Inc.], to have them build in support," said Wendy Simpson, SafeSurf president.

Taking another approach, Microsoft Corp., Netscape Communications Corp. and Progressive Networks Inc. in May formed an alliance called the Information Highway Parental Empowerment Group (IHPEG).

"Our goal is to build filtering capabilities into the industry-standard Internet-access software products ... and to open up a third-party network so the industry can create and implement its own ruling systems and methods for implementation," said Rob Glaser, president of Seattle-based Progressive Networks and chairman of IHPEG.

Glaser said an HTML tagging system may be one aspect of the solution, but another may be the creation of multiple rating systems allowing parents to choose one that best fits that family's — or company's — values. "For example, the system I want to use for my 5-year-old son may be very different than the one someone else chooses for their 15-year-old," Glaser said.

IHPEG plans to publish its strategy by year-end. □

NOV*IX Elite ups security

FireFox Inc. announced last week an upgrade to its TCP/IP control software that adds NetWare integration but commands a higher price.

NOV*IX is FireFox's NetWare-based server that dynamically doles out TCP/IP addresses to authenticated users on a LAN. The server can also restrict access to outside Internet data, based on specific packet addresses (see MacWEEK, Sept. 19, 1994, Page 8).

FireFox said it will ship in September a new NOV*IX Elite that uses account information from NetWare Directory Services instead of the older NetWare Bindery, providing better security. The Elite package includes client terminal-emulation and FTP tools; the new version will let the server take over file transfers, freeing up the client machine.

Elite will start at $1,435, up from $1,100, for five concurrent users.

The company said it expects in October to release NOV*IX Internet, a version that will filter specific HTTP (Hypertext Transfer Protocol) data, such as images contained in Web pages.

FireFox Inc. of San Jose, Calif., can be reached at (408) 467-1100 or (800) 230-6090; fax (408) 467-1105.
— By Stephen Howard

E-mail messages are like fish: You don't want to let the big ones get away, but you need to screen out the little stinky ones. Eudora Pro has message filters that you can preset to separate the Big Mouths from the Barracudas.

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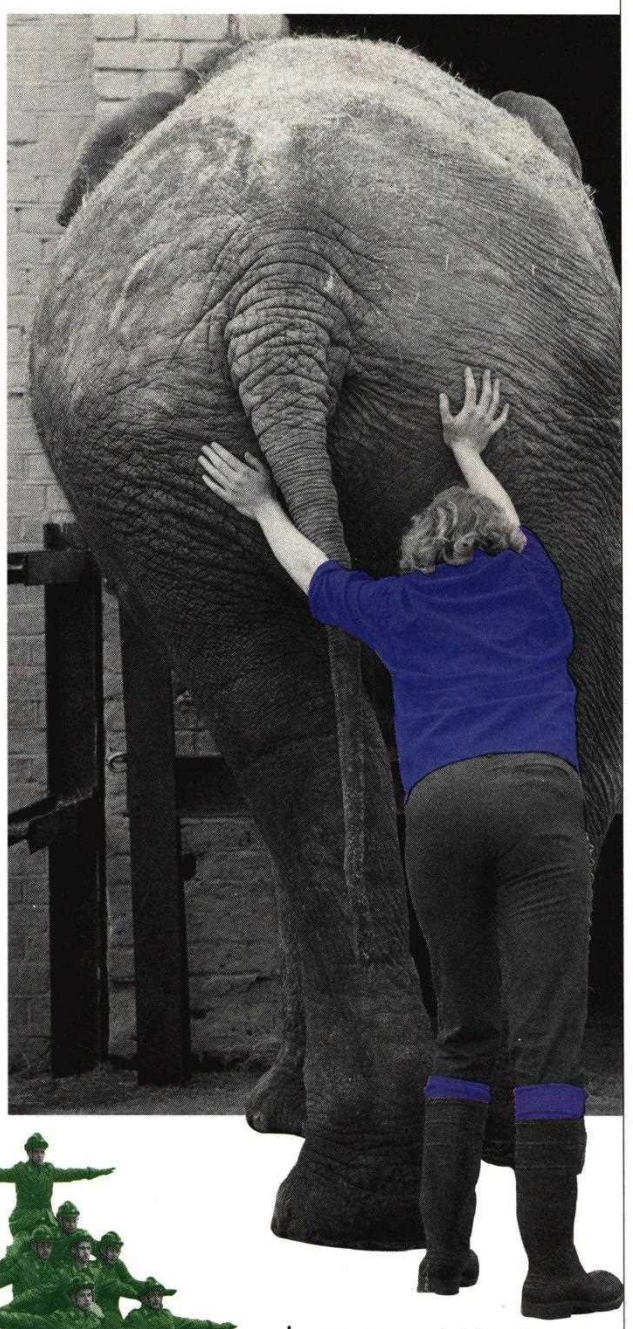
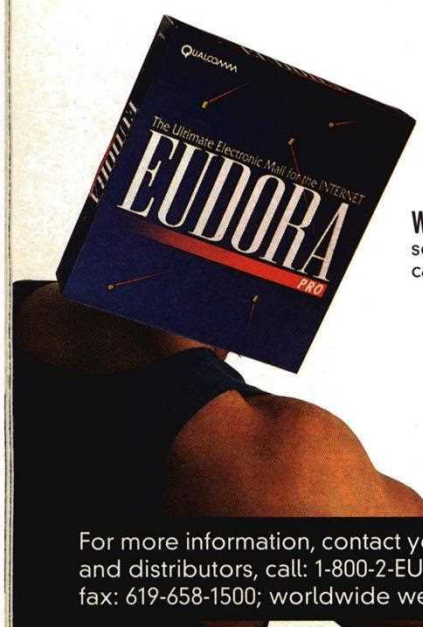


Over two million Mac and PC users aren't the only ones applauding Eudora. MacUser selected Eudora Pro as the best communications software of 1994.

MACUSER EDITORS' CHOICE AWARD 1994 WINNER

Most proprietary e-mail applications have really great front ends (GUIs) and tons of features. But try pushing one through a gateway without getting something trampled on... like your message. Not a pretty sight!



Want security? Eudora Pro uses a sophisticated authentication system called Kerberos to guard your mailbox.

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For more information, contact your local dealer. For a listing of authorized Eudora resellers and distributors, call: 1-800-2-EUDORA ext. 6082; e-mail: eudora-sales11@qualcomm.com; fax: 619-658-1500; worldwide web address: http://www.qualcomm.com/QualHome.html.

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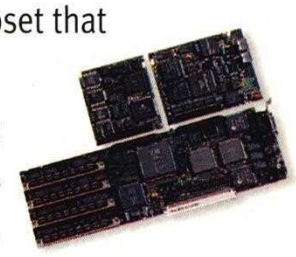

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Internet to get chattier

By James Staten

The Internet became a tad more social last week when Prospero Systems Inc. shipped an Internet chat system that gives the cryptic Unix Internet Relay Chat system a simpler interface.

Global Chat, available for download free from the company's World-Wide Web server, allows Mac, Windows and Unix users to participate in Internet Relay Chat, or IRC, a standard for text-based conversations.

The application replaces the difficult command-line-based interfaces of traditional Unix chat clients with a graphical interface more akin to those in standard Mac applications. Users can be connected to a chat server while using other Internet client applications, such as a Web browser, the company said.

"People who are used to using chat on America Online or CompuServe will find this interface very familiar," said Mark Graham, president of Whole Earth Networks, a division of The Well, a BBS based in Sausalito, Calif. "It's a major step forward and will make IRC available to a whole new and much larger group of users."

In addition to text-based communications, Prospero said Global Chat allows users to view graphics and hear sounds sent by the server.

The company plans to offer its own Mac-based IRC server later this year. Global Stage Server, currently available for Unix, will provide full IRC functionality plus password authentication for access to member databases, Internet commerce through First Virtual Holding Corp.'s electronic payment system and moderator tools for administering live conferences.

Global Stage Server will be free for up to 50 users, $1,195 for 100 users and $7,995 for 1,000. The 1,000-user version will provide scripting support for integration with third-party databases and simulcast capabilities for graphics, sound and links to Web sites.

Prospero Systems Inc. of San Francisco can be reached at (415) 957-0724; fax (415) 731-3395; info@prospero.com; http://www.prospero.com. □

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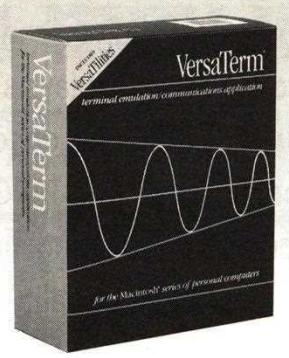

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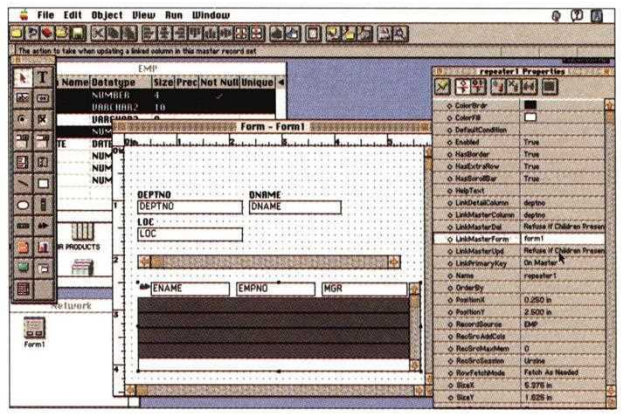
Objects

From Page 24

the packages for the Mac and Windows versions.

According to Corporate's Comaford, Oracle benefits from the deal because it can take advantage of Apple's sales and distribution channels, while Apple benefits because "it gives them a way to get into the workgroup, and it makes them a player."



Power Objects, Oracle's new visual development tool now available for 680x0 Macs and Windows machines, allows users to construct applications using predefined, reusable objects.

Power Objects will also be available on Oracle's World-Wide Web site, and the company plans to sell Power Objects components on a new Web site dubbed Oracle Object Marketplace.

Oracle said it will have Power Objects for OS/2 ready next year, and IBM of Armonk, N.Y., announced it will co-market the OpenDoc-ready OS/2 version.

The client-server version of Power Objects with direct interfaces to Oracle7, Sybase SQL Server and Microsoft SQL Server databases costs $1,995, with no runtime licensing fees. The program is also available in a stand-alone version with the Blaze single-user SQL database for $395. The stand-alone version also includes connections to Personal Oracle7.

Oracle Corp. of Redwood Shores, Calif., is at (415) 506-7000 or (800) 672-2531; fax (415) 506-7200; http://www.oracle.com. □

Ceneca

From Page 24

HTML 2.0 tags and output HTML files as its default format. It will not support the proposed HTML 3.0 standard in its initial release but will feature selected extensions proposed by Netscape Communications Corp., including centering and image size.

SiteMill's Web-server management functions will track all links among HTML documents. It will cache a directory of all referenced HTML pages and associated elements. When a Webmaster renames, moves or deletes a linked page or element, the application will automatically update all associated pages with a correct link. SiteMill will also generate an error log for links that have no associated page, the company said.

"Dead links can be very difficult to track down, and updating the link [with SiteMill] is as easy as dragging the proper file onto the link," said Jon Wiederspan, director of services for ComVista Internet Solutions Inc. of Redmond, Wash.

Ceneca Communications Inc. of Palo Alto, Calif., can be reached at (415) 842-6810; fax (415) 842-6818; info@ceneca.com; http://www.ceneca.com. □

Paging

From Page 24

A new network monitoring gateway lets users acquire reports via The AG Group Inc.'s Skyline/Satellite, Peek series and Net Watchman applications.

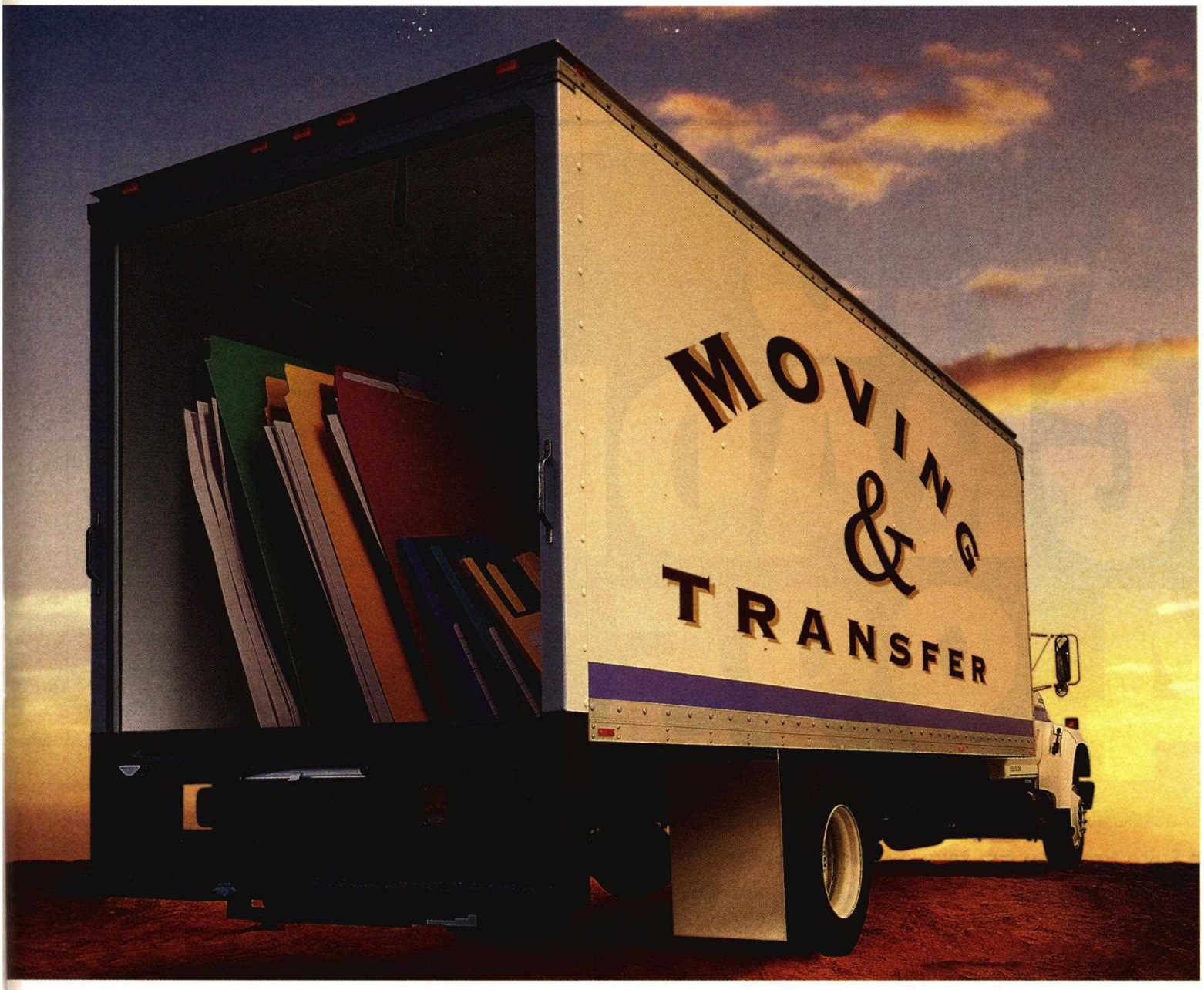
With Version 1.5, users can send voice pages via Cypress Research Corp.'s MegaPhone telephony software. Mac developers can now use UserLand Frontier and Apple's Macintosh Programmer's Workshop to write customized paging PageNOW! 1.5 scripts.

In addition to new gateways, PageNOW! 1.5 offers tools to reschedule pages, check pages via a preview window and configure multiple pages to be sent via a single phone call.

The personal and workgroup versions are available for introductory prices of $79.95 and $395, respectively, until Oct. 1. Upgrades are $29.95 and $98; Enterprise Edition upgrades are $195.

Mark/Space Softworks of San Jose, Calif., can be reached at (408) 293-7299 or (800) 799-1718; fax (408) 293-7298. □

Just Because You're Moving To A New Word Processor Doesn't Mean You Have To Leave Your Files Behind.



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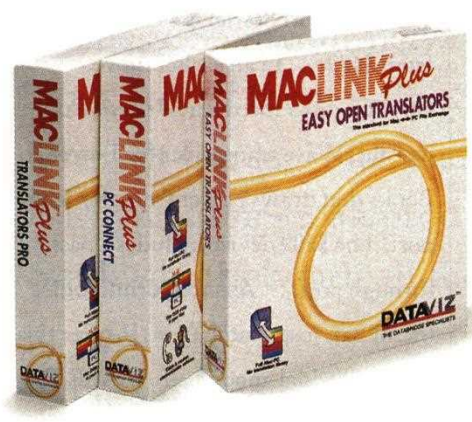

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QuickMail directories get in sync

By Nathalie Welch

CE Software Inc. last month began offering a stand-alone package to ease the updating of QuickMail account directories and said it would bundle an Internet gateway with QuickMail 3.5 this month.

CE's $495 QuickMail NameServer Database Distribution application dispenses mail address information from a central NameServer directory to subordinate mail servers. The software was developed by The Boston Software Works Inc. of Boston as part of its InterOffice Message Exchange directory synchronization system and is still available at prices starting at $4,500 (see MacWEEK, Feb. 20, Page 12).

CE's Internet Sampler Pak for QuickMail 3.5, due this month, will include InterCall, a UUCP (Unix to Unix Copy Program) gateway enabling 10 users to access Internet mail. It includes a month of free Internet services, plus 10 hours of free connect time.

CE Software Inc. of West Des Moines, Iowa, can be reached at (515) 221-1801 or (800) 523-7638; fax (515) 221-1806. □

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MEDIA 100

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DV Magazine - May, 1995

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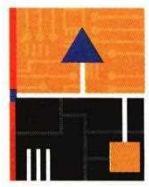

- **Sonic ships PPP dial-in software**
- **SMC adds to EliteSwitch ES/1**

This week **Sonic Systems Inc.** of Sunnyvale, Calif., will debut software that turns a Mac into a remote-access server. The $399 software, called PRA, uses AppleTalk over Point-to-Point Protocol and will come with an unlimited-user license for the client software. The $399 extension and administrative program supports multiple lines. … **Standard Microsystems Corp.** of Hauppauge, N.Y., plans to ship this month its new backbone switch, the EliteSwitch ES/1 ATX. The five-slot device will accept Ethernet, token-ring and Fiber Distributed Data Interface modules; plans are to offer Fast Ethernet, Asynchronous Transfer Mode and 100VG-AnyLAN modules soon. The box's base price is $14,950. … Last month, **Farallon Computing Inc.** of Alameda, Calif., reduced the estimated street prices on its Apple AUI (attachment unit interface) transceivers and 10BASE T hubs. A 10BASE T transceiver should now cost about $39, down from $54, and a pack of 10 about $375, down from $519. Farallon's eight-port Ethernet hub, previously $189, is $149, and its 16-port Starlet is $455, down from $489. … In an earlier move, **Farallon** introduced a new version of its EtherWave transceiver for PowerBooks that draws power from the ADB port. The $289 device includes a pass-through port. … **Asanté Technologies Inc.** of San Jose, Calif., plans to offer this fall a $399 dual-mode 10/100BASE T NuBus card and a $179 10-Mbps Ethernet PCI card with a Mac driver. Dual-mode NuBus cards have already been shipped by Farallon and announced by Dayna Communications Inc. Asanté also dropped the price on its Apple AUI 10BASE T transceiver to $49 from $69. □

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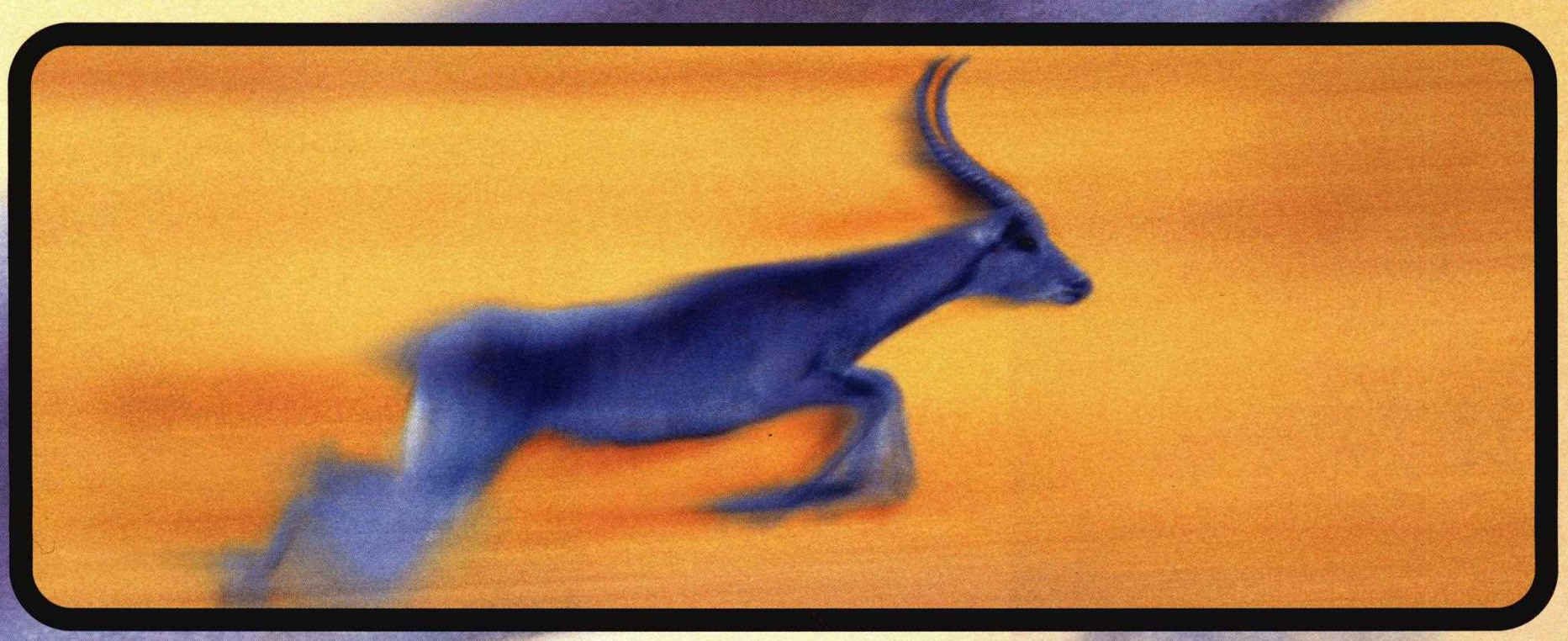

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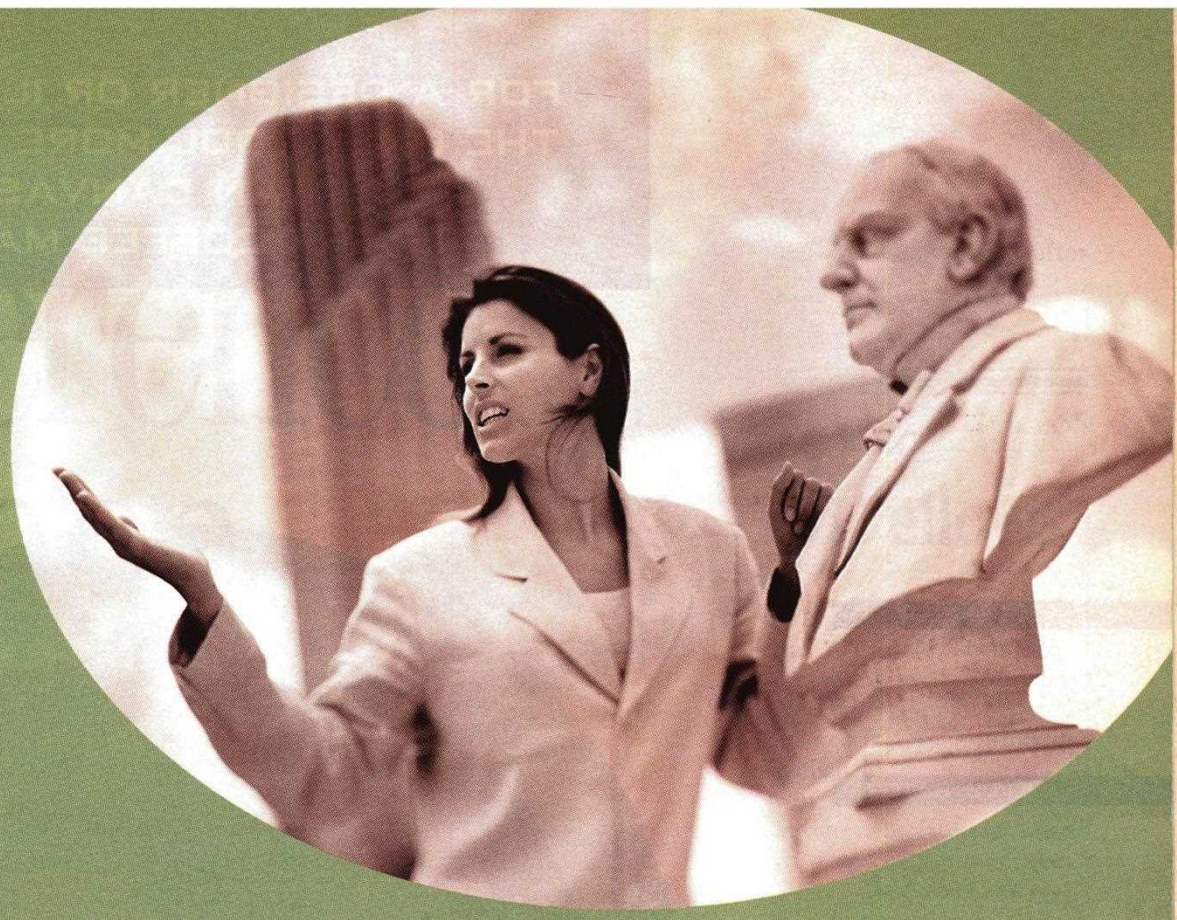

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MAC

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Two Wall Street companies downgraded Apple's stock after it announced disappointing third-quarter profits.

NEWSMAKER

The man behind Power

Torresi pining to add clone maker to line of successes

"I don't want to sound romantic or naive, but we're in the same camp as Apple."

— Enzo Torresi, Power Computing chairman

By Jon Swartz

Power Computing Corp. Chairman Enzo Torresi has done it before. As a former marketing executive and CEO he has played a key role in an unprecedented string of successes that read like a Who's Who of the personal computer industry: Ing. C. Olivetti & Co. SpA, Businessland Inc. and NetFrame Systems Inc.

Can he do it a fourth time?

The odds against Power Computing in the crowded Mac clone market are steep, but the potential payoff is big. Despite competing for mind share with Radius Inc., DayStar Digital Inc. and the real McCoy, Apple — not to mention the delicate dynamics of financing, marketing and distribution — the 2-year-old company expects to sell $100 million worth of Mac-compatible boxes by mid-1996.

"It all comes down to execution," said Torresi, Power's resident tactician. "If we execute our technical and channel strategies properly, we will succeed. If we don't …"

So far, Power has been quickest out of the gate among the three Mac clone makers. After a hiccup in production, the company's lower-cost Power 100 series is rolling off the assembly line; more than 5,000 machines have been sold. Meanwhile, venture capital keeps rolling in. The latest round of funding, some $8 million, has pushed total investments in the private company to $13 million.

Torresi said he sees no reason why the momentum will stop. In July, Power sliced the price of the base Power 100 configuration to $1,699 from $2,399. He said the price cut will not only spur interest — and sales — of Power 100s but augment Power Mac shipments.

He predicted Apple will ship 1 million PowerPC-based Macs in its fourth quarter, which ends Sept. 30. "I don't want to sound romantic or naive, but we're in the same camp as Apple," he said. "This is an issue of Mac OS vs. Wintel, not Apple vs. Power."

Power intends to complement

See Torresi, next page

Apple's jolly good Fellows

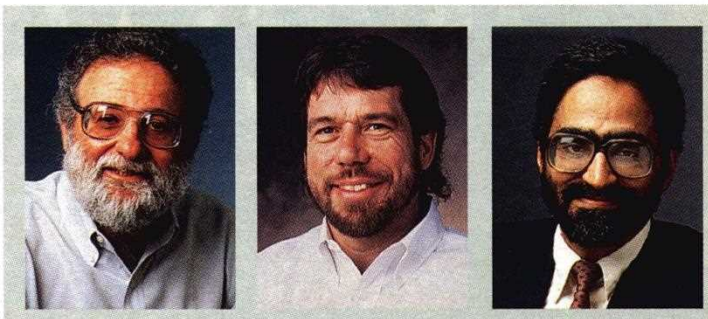
By Don Monkerud

"The only way to create the future is to invent it." That's the motto of Apple Fellows, who recently have left an imprint on the company's present as well.

This summer, Don Norman was named vice president of the company's Advanced Technology Group (ATG), and former Apple evangelist Guy Kawasaki returned to the fold. Their high-profile jobs, as well as the key roles of other Apple Fellows, have placed the group firmly in the spotlight.

"A new paradigm like the Macintosh only happens once every 10 years," Norman said.

See Fellows, next page



Three of the six Apple Fellows (from left to right): Don Norman, Steve Capps and Gursharan Sidhu.

Industry watchers size up new PCI Macs

As Apple prepares to raise the curtain on its latest trio of PCI-based Macs this week (see MacWEEK, July 31, Page 1), industry observers weighed in with their opinions. The models — the Power Mac 7200, 7500 and 8500 — range in price from $1,700 to $4,500.

"The new machines should sell like crazy. The only question is whether Apple can build enough to fill demand."

— Ken Krich, CEO, ComputerWare, Palo Alto, Calif.

"With PCI, [the latest Macs are] more optimized for RISC architecture."

— Matt Sargent, analyst, Computer Intelligence InfoCorp, La Jolla, Calif.

"The pricing for the entire line looks incredibly good. They will sell extremely well if they're available."

— Tom Santos, president, MACadam Computer Inc., San Francisco

"I think Apple's going to sell a lot of Power Macs to consumers this fall. … The real high-end graphics user is going to want the 8500."

— Eric Lewis, manager of PC hardware research, International Data Corp., Framingham, Mass.

Used Macintosh prices

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Classic	2/40	$325	**Centris 660AV**	8/230	$900	**PowerBook 145**	4/80	$750
Classic II	4/40	$400	**Quadra 605**	4/80	$600	**PowerBook 145B**	4/80	$750
Color Classic	4/80	$675	**Quadra 610**	8/160	$775	**PowerBook 160**	4/80	$1,000
LC	2/40	$250	**Quadra 650**	8/230	$1,600	**PowerBook 165**	4/80	$1,075
LC II	4/40	$350	**Quadra 660AV**	8/230	$950	**PowerBook 165c**	4/80	$1,200
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IIx	5/40	$400	**Quadra 840AV**	8/230	$2,175	**PowerBook 180c**	4/80	$1,700
IIcx	5/40	$375	**Quadra 900**	8/230	$1,600	**PowerBook 540c**	4/320	$2,500
IIci	5/80	$600	**Quadra 950**	8/230	$2,250	**PowerBook Duo 210**	4/80	$700
IIsi	5/40	$375	**Power Mac 6100/60**	8/250	$1,125	**PowerBook Duo 230**	4/120	$850
IIfx	4/80	$750	**Power Mac 7100/66**	8/250	$1,750	**PowerBook Duo 250**	4/200	$1,200
IIvx	4/80	$700	**Power Mac 8100/80**	8/250	$2,600	**PowerBook Duo 270c**	4/240	$1,900
Centris 610	4/80	$600	**PowerBook 100**	4/20	$450	**PowerBook Duo 280**	12/240	$2,200

Source: United Computer Exchange Corp. For more information, call (404) 612-1205 or (800) 755-3033; 24-hour fax info (404) 955-0569; united@uce.com.

Fellows

From previous page

"It's time for the next one, and we're going to give it to you."

The six Apple Fellows appear to be up to the task. Indeed, their accomplishments are milestones in Mac history: Newton, ResEdit, Mac Finder, ColorSync, AppleTalk, QuickTime VR and object-oriented programming, to name a few.

"An Apple Fellow has his freedom," Norman said. "Apple says, 'Go do something important.' "

The individuals, who are appointed based on technical contributions, leadership skills and vision, report monthly to the vice president of ATG to brainstorm strategy and product development. Apple Fellows are salaried, do not necessarily have day-to-day responsibilities and are free to research their areas of interest.

"Our one goal is to set a vision of where Apple should be going," said Apple Fellow Gary Starkweather, director of publishing technology, developer of laser scanning technology, and holder of 29 patents in optics and nonimpact printing.

The rest of the Fellows lineup includes:

- **Steve Capps,** developer of the Newton interface: "Apple has a long-standing habit of not sticking to things. I owe it to the people I work with *not* to be flighty and hop all over the place chasing after the next shiny piece of research technology. I'm 99.99 percent involved in Newton."
- **Gursharan Sidhu,** developer of the LaserWriter printer and AppleShare file server: "My concern is how to bring information technology to a billion users. Our technology doesn't scale well to very large populations, like in India. I want to promote experiments like an information village to help people learn and provide information to nourish their entrepreneurial spirit."
- **Alan Kay,** who developed the idea of personal computing, overlapping windows and the laptop personal computer: "Even well-meaning people try to recapitulate forms from the past. With the Fellows program, Apple is interested in inventing media for powerful and serious ideas." □

Torresi

From previous page

Apple by selling its boxes directly to users, an area where Apple "doesn't do well," Torresi said. He also said that the model has been a success for Dell Computer Corp. and Compaq Computer Corp. "And we believe it will be for us," Torresi said.

Torresi said Power even plans to move closer to Apple — from its current home in Milpitas, Calif., to Cupertino, Calif. — in October. Things won't be as chummy with Radius, however. Although Torresi has a strict policy of "never, ever" underestimating or disparaging competitors, he directed some jabs at Radius.

"There isn't as much pressure [for us] to meet Wall Street expectations for the next quarter," Torresi said. "We didn't lose 55 cents a share [or $3.1 million, as Radius did in its recently completed quarter]. The fact that they're a big company means they have other fish to fry beyond Mac-compatible products. We have the advantage of being a focused company."

As for the future, Torresi said Power plans to deliver server-based products in late 1996 and is eyeing OEM opportunities in Europe and the Far East. He declined to comment on potential agreements with Mac mail-order catalog companies. □

Broderbund to buy The Learning Co.

In a move to beef up its offerings in the home and education markets, Broderbund Software Inc. last week said it intends to buy The Learning Co. for $440 million.

The Learning Co., headquartered in Fremont, Calif., will become a wholly owned subsidiary of Novato, Calif.-based Broderbund. It is the publisher of titles such as Reader Rabbit, Student Writing Center and the Learn to Speak foreign language series.

Broderbund makes and distributes multimedia products, including the Carmen Sandiego series and The Print Shop.

Broderbund CEO Doug Carlson and company President Bill McDonagh will retain their positions in the merged company. The deal is expected to be completed by the end of the year, according to Broderbund. □

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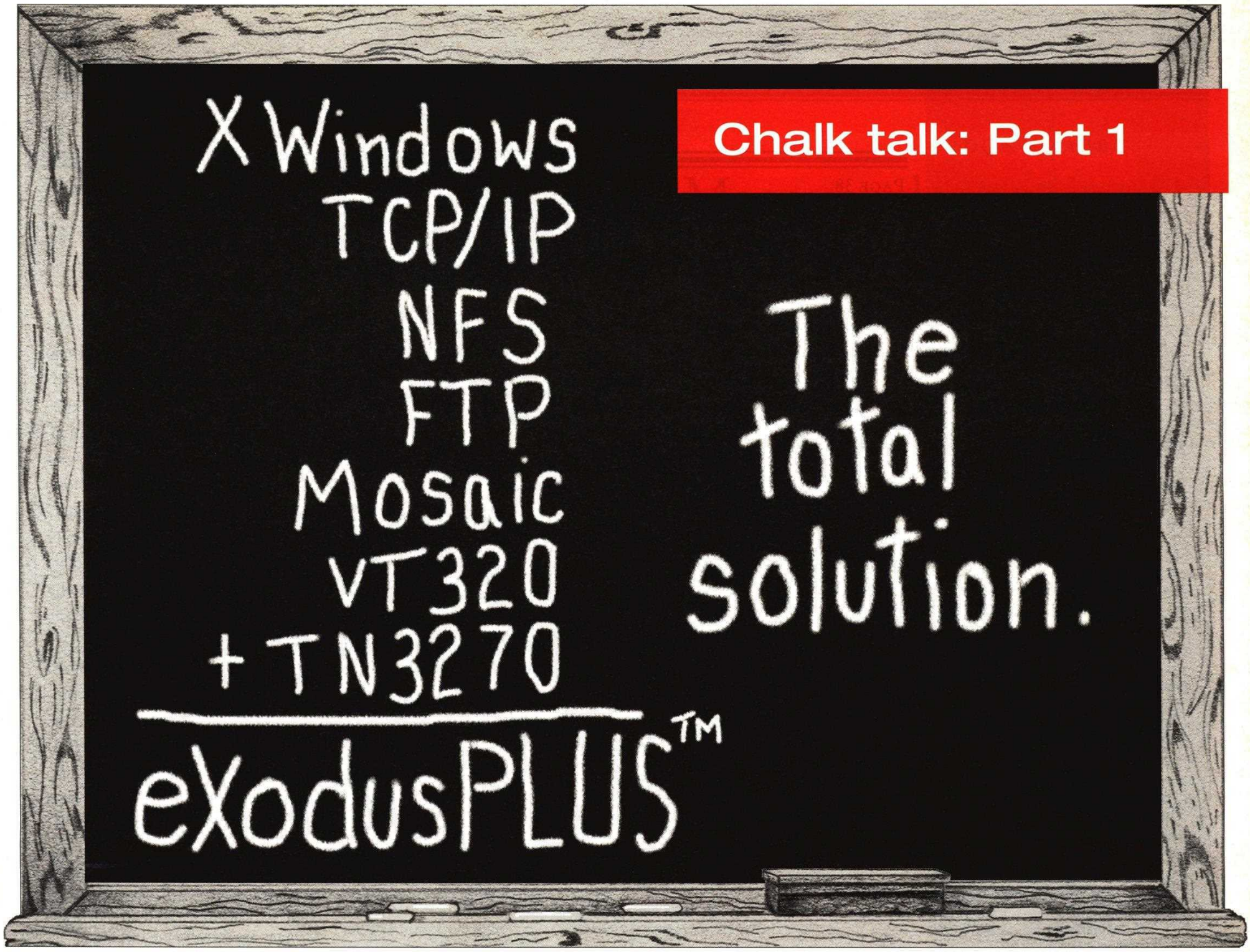

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BPA INTERNATIONAL

The clone celebration begins

It's a party! A bash for the majority of the Macintosh-using world, who, for the first time this week, will be able to buy their favorite operating system in a box decorated with something other than a rainbow-colored Apple.

For those whose first opportunity to get up close and personal with a Mac compatible from Power Computing Corp., Radius Inc. or DayStar Digital Inc. will be this Macworld Expo, clones should prove to be something worth celebrating. And we're sure that last week's price cut on the Power 100 will mean many tire kickers will make this show the time to come home with more than a bag of brochures.

But amid all this euphoria, we feel compelled to sound a small note of caution, not to the customers lining up to rub elbows with these newly minted compatibles but to the clone makers themselves. While they bask in some hard-earned limelight, they need to be sure to keep repeating this mantra: "I'm not an Apple third party. I'm not an Apple third party."

Why is this important? Because for the clone business to become a long-term success, the relationship between Apple and its licensees should be like it is between Microsoft Corp. and Compaq Computer Corp. — as a supplier to a customer, not a platform vendor to a developer.

Power, Radius and DayStar are the platform vendors. That means a long-term commitment. Clone makers should not rely on Apple to pioneer new markets, support their customers or even do all developer evangelism. Licensees must extend the Mac OS platform for Mac clones be a success. This is too small a market for a bunch of companies to fight over the same bit of turf.

It is almost impossible to underestimate the value of finally having a choice after more than a decade of monopoly. But if clone companies do nothing to build differentiated machines, attract new developers, and establish new markets or expand existing markets, all the euphoria surrounding this week's clone festivities may quickly fade into one hell of a hangover. □

GUEST EDITORIAL KEN BOHLEN

Apple must help IS see the benefits of the Mac

At John Deere & Co. we design and produce some of the world's finest agricultural tractors. We have more than 2,000 Macs, more than 700 Intel-standard machines, and more than 100 Unix and VAX machines.

Many of the Macs are nearly obsolete, and we face the problem of whether to replace them or expand our installed base of Pentium systems.

Emotional issue

In past years, this issue did not warrant much discussion. We could easily highlight the Mac's clear advantages:

- Minimal employee training is required to make a person productive. (At our Waterloo facility it takes a mere two hours.)
- File names are not restricted to the unnatural eight- and three-character DOS restrictions, making stored files more useful.
- All Macintosh applications have a look and feel that is similar.
- Remote connections easily link users to a site network and give them the same capabilities as their local machines.
- File sharing among employees, workgroups and the enterprise is a snap.
- Networking to multiple environments is leading-edge and requires little maintenance.

In light of the arrival of Windows 95, many of these points are less obvious, but my experience suggests that there are still many advantages to the Mac.

But there is an emotional issue swirling around the Mac and Intel platforms. The emotion fosters a reluctance within large organizations to take a business approach to making platform decisions. In this charged atmosphere it is incumbent on Apple to provide the burden of proof in favor of the Mac or be willing to lose large accounts.

What can Apple do? First, it must reevaluate how it introduces new products to large customers. (IS managers should not be salespeople.) Apple needs to help IS understand the benefits of the Mac. If it counts on third parties, Apple will lose more often than it wins.

Second, Apple must increase its slim awareness in retail segments. If you experience the sales process at computer retail outlets (and IS managers do), you know that the sales forces have no appreciation for the Mac's advantages, let alone any of the finer details. Although lower prices are helpful, Apple's retail channel is in need of dramatic improvement.

A clear focus

Finally, Apple must be exquisitely clear about its product and market strategies. For example, does the company encourage organizations like Deere to buy clones? Why or why not? What Apple products can we expect to see over the next 12 months? IS plans that far ahead; Apple should help us. Be realistic, conservative even; then deliver on promises.

This is not a prescription that will propel Apple into market-share leadership, but it will strengthen the basics that made Apple what it is today. □

Ken Bohlen is the manager of computer systems at the Product Engineering Center at John Deere & Co.: Waterloo Works of Waterloo, Iowa. He can be reached at RX23474@deere.com. Henry Norr will return Aug. 21.

LETTERS

No PCI video card, no Mac

I am pissed. I purchased a Power Mac 9500/132 through the Apple developers program. I filled it with 80 Mbytes of RAM, attached a 4-Gbyte RAID to it and bought a new 20-inch monitor to display the "ultimate Mac's" brilliance.

I read all about the new PCI cards in your magazine (MacWEEK, July 17, Page 10) with excitement, but after three weeks the computer is still sitting on the floor, useless. Why? Because you can't get a video card for it. There isn't one to be had. Despite a previously announced ship date of July 17, Radius Inc. isn't shipping (at least until the new date of Aug. 13) and neither is Diamond or ATI or Integrated Micro.

Oh, sure, Apple is shipping the 9500/120 with some version of ATI's XClaim card, but it's not available for the 132. Apple must have bought up the whole supply. This is truly obnoxious. I don't have any way of knowing, but I would guess they didn't give their third-party vendors enough advance notice of the PCI specs to allow them to complete their products in time.

But this is exactly the reason for onboard video. If a video card goes down or isn't available, you can actually run your computer.

I can't believe Apple is selling people computers they can't use. Somebody should really blast them for this. They need to hear it.

Lenny Eiger
DataBright Management Systems
Mill Valley, Calif.

XPress needs competition

I read Carolyn Said's column (MacWEEK, July 17, Page 3) with interest and agreed with the concluding line strongly enough to cheer her on.

Even though I teach a class in QuarkXPress at Otis Art Institute and tout it to my students as a superb program, I've long welcomed a serious competitor for XPress. I'd like to see something humble the folks in Denver, if not make them conform to industry conventions in areas such as upgrades.

In Quark's defense, I usually get good information in a timely fashion from the on-line support people on CompuServe, but while one hand is patting you on the back, the other is striking you like a too-strict parent might.

It pleases me to see the press call a spade a spade, and I again applaud your comments.

Michael Diehl
Owner
Michael Diehl Design
Glendale, Calif.

PageMaker's virtues

PageMaker Version 6.0 is Adobe's announcement to the market that they have bought the software. Now in one upgrade you have a lot of features that PageMaker, according to QuarkXPress users at least, has been "missing."

I don't know why it has taken 10 years to make these changes; I suppose that it is either because (a) Adobe hasn't owned PageMaker for 10 years or that (b) maybe PageMaker's users haven't needed these features except to satisfy the grumbling of Quark users. If you don't like PageMaker, don't use it. But keep it to yourself; more and more, Quarkies are starting to remind me of PC idiots who engage in an impassioned defense of Windows if they so much as hear me say the word "Macintosh."

As for the alleged "difficulties" people have with PageMaker files, I have long stopped letting them bother me. Once a baffled Quarkie kept going to the Page Setup window and adding 36 to the starting page number before printing, expecting Page 36 to print. "Isn't that how you do it?" was his explanation.

So while Insider columnist Carolyn Said makes an accurate point about the need for training (or retraining) at service bureaus, she does in fact make the same mistake as the baffled technician. Certainly, one of the virtues of the Macintosh platform is that it is easy to learn; however, don't think that it is not necessary to learn anything to use it.

PageMaker's virtues are apparent to anyone involved in designing text-heavy publications; not every publication finds it necessary (or even desirable) to wrap text within a circle.

Chris Leslie
New York

If the name fits ...

I was quite amused by Apple christening their next MessagePad with the code name "Q." As many "Star Trek: The Next Generation" fans will recall, you never know when Q will show up, and when Q does, it's always quite annoying. Apple has covered themselves well on this one.

Shawn Collins, technical analyst
20/20 Funds Inc.
Oakville, Ontario

How to contact MacWEEK

Send letters to MacWEEK, 301 Howard St., 15th Floor, San Francisco, Calif. 94105; fax (415) 243-3651. We can be contacted on-line: CompuServe, 76077,1351; eworld, MacWEEK; MCI, 323-1203; Internet, letters@macweek.ziff.com. Include your name, address and phone number. We reserve the right to edit for clarity and length.

THE MAC MANAGER DON CRABB

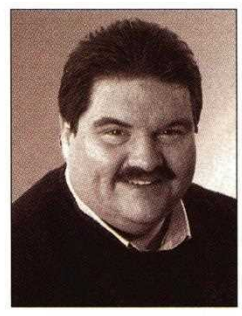
If Mac users love pain, they should buy Win 95

Two and a half weeks from the release of Windows 95, and Mac folks are starting to get really antsy. Many of the bugs have been fixed. It has been optimized. It works with more peripheral stuff. It is shipping a year ahead of Copland.

It's the technobuzz on the street this year. Win 95. Windows 95. Microsoft Windows 95.

Just an OS

Lighten up. It's just a computer operating system. It does not turn water into a Heitz Reserve Cab. And despite some quality work from Redmond, it still ain't no Mac OS.



If you're freaking under the onslaught of the Windows brigades, try this: Carefully eavesdrop on as many computer conversations as you can and count how many times you hear "Windows 95 will [wildly over- or underinflated action here] to the [Mac or computer] business." Then go back to your office and laugh your head off at all this overprognostication.

Even if you're still worried about the planet turning into a WindowsWorld, this reflective process will give you a nice respite from thinking about O.J.'s bloody glove, the baseball season or whether it is theoretically possible to catch a cab in Boston in August (theoretically — yes, practically — no).

But if this doesn't snap you out of your Win 95 funk, give in to it and check out my top 10 reasons why Mac users should buy Windows 95:

Beginning with No. 10 ...

10. It validates the Finder a mere 11 years after its invention.

9. Its memory requirements are bound to force down RAM prices for all of us, as new plants come on-line to meet the increased Windows 95 RAM needs.

8. The soothing "blue cloud" product box and splash-screen graphics will help you get in those much-needed daily naps.

7. You can hardly wait to try Windows 95's version of SimpleText, called WordPad — all 1.4 Mbytes of it!

6. You'll be able to remotely access your home Intel-standard PC over phone lines. Wow! Them boys and girls at Microsoft sure is smart, ain't they? Whew!

5. Can you say Microsoft Office 95? I knew you could! Get the lowdown on it now so that when the slower, buggy Power Mac version ships a couple of years from now, you'll be ready for it.

4. You're eager to improve your cross-platform network configuration and management skills, so tackling virtual device drivers, the Novell NetWare requester and a skeletal TCP/IP implementation has you drooling.

3. Get this. You can delete, move and manipulate files and folders on the desktop!

2. Seeing the beauty in protected memory and pre-emptive multitasking, you're eager to load up a pile of 16-bit Windows 3.x applications into their Windows 95 shared old-applications memory space and time how long it takes before the whole thing dies, which allows you the further joy of operationally defining terms such as "pre-emption" and "protected" in the first place, just like Microsoft.

1. Its $209 first-timer's price and $109 upgrade price takes care of all that extra cash you had left after buying System 7.5. □

Don Crabb welcomes comments at his Internet address decc@cs.uchicago.edu. You can also check out his home page at http://cs-www.uchicago.edu/~decc/.

"Honestly, I like your 3-D rendering, but I'm not looking for a spatial relationship right now."

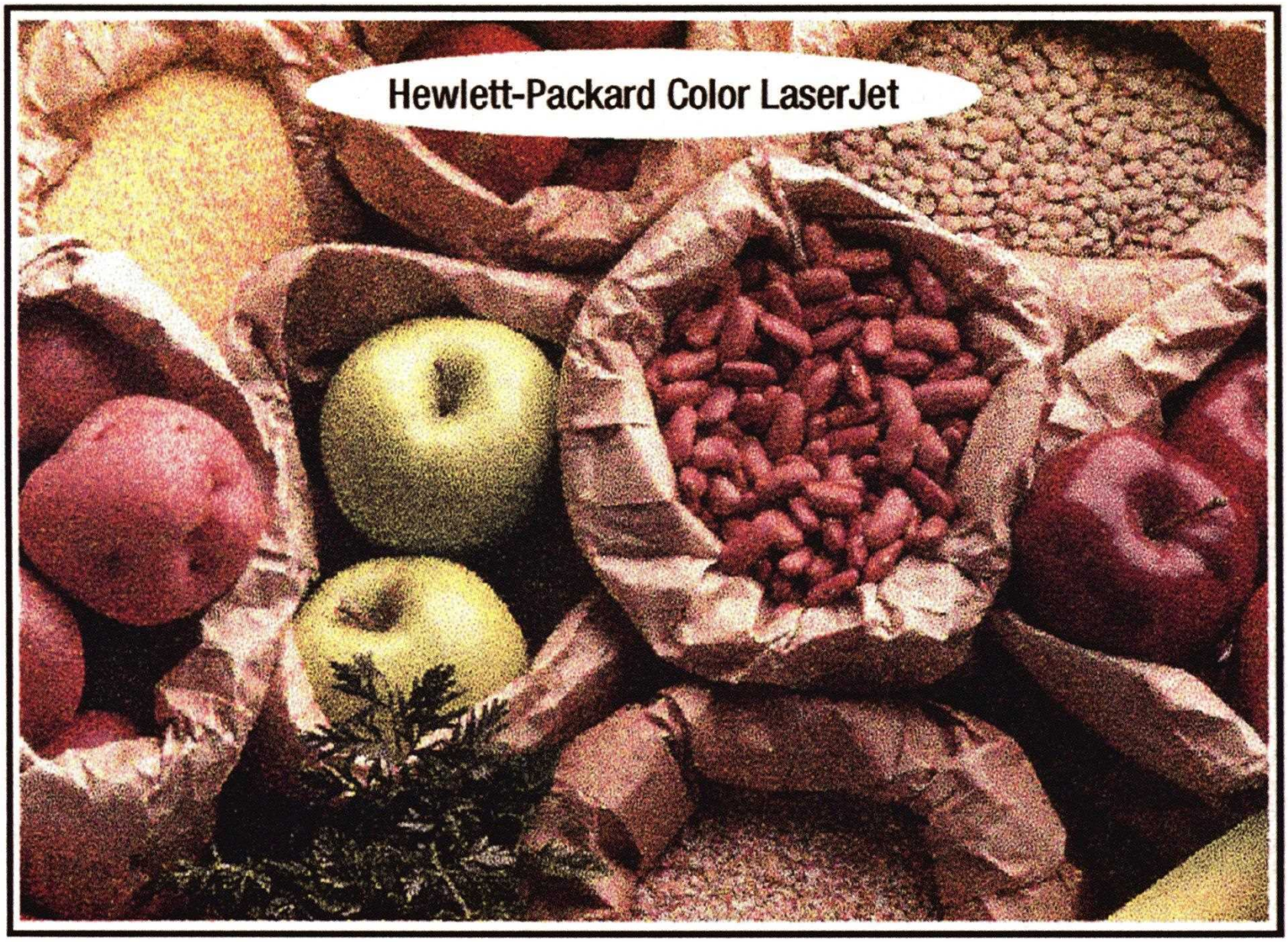
Comments? Ideas? Contact Eli at elitoons@aol.com

A picture is worth
But for some reason, Hew

In this case, a picture seems to be worth slightly more than a thousand words. Because after seeing the difference between printers, we just couldn't keep quiet. As you can see above, the Apple® Color LaserWriter® 12/600 PS with Color PhotoGrade delivers near-photographic quality that can make virtually everything you print more expressive. True 600 dpi resolution means that sharp, black text always comes out as sharp, black text. Your PostScript™ and TrueType® fonts, as well as your

Introducing the Apple Color LaserWriter 12/600 PS

The Apple output shown was printed on the Color LaserWriter 12/600 PS with all printer settings set to default. The Hewlett-Packard output shown was printed on the HP Color LaserJet with the PostScript upgrade and with all printer settings set to default except the halftone setting set to scatter dither (enhanced) mode. *©1995 Apple Computer, Inc. All rights reserved. Apple, the Apple logo, ColorSync, LaserWriter, Macintosh*



a thousand words.
lett-Packard is speechless.

line art, have never had more impact. And it's incredibly easy to use. Just hit Print. With ColorSync® 2.0, our seamless color-matching technology, the color you see on your monitor is the color you see on your paper. To hear even more words about the Apple Color LaserWriter 12/600 PS (words like "surprisingly affordable" and "cross-platform compatibility," to name just a few), call 800-538-9696, extension 525, for the authorized Apple reseller near you. Or, if it's more convenient, visit us on the Internet at http://www.apple.com. Enough said.

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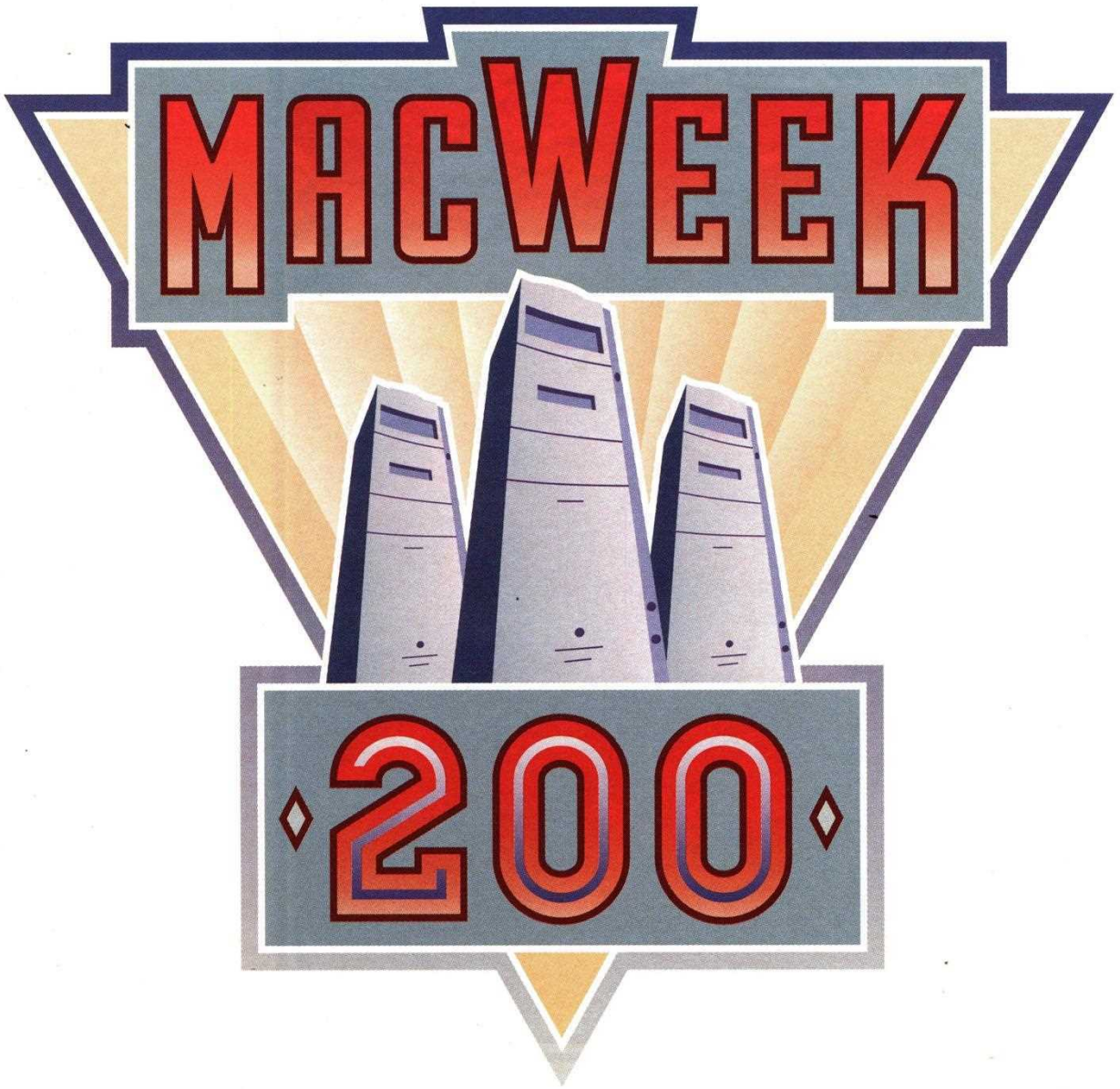


Power Macs entrenched; many managers cautious about purchasing clones

Power Macs are rapidly taking their place on many desks at MacWEEK 200 sites, but this year — at least — more of them will be from Apple than from any clone manufacturer. MacWEEK 200 sites combined plan to buy more than 30,000 Power Macs. Yet, just under half of the sites say they're likely to buy clones.

Altogether, the total number of installed Macs reached 290,000 in this seventh annual MacWEEK 200 survey. This accounts for 39 percent of all computers found at these sites. Intel-standard machines account for 49 percent of the total, while workstations, found at 93 percent of sites, make up 12 percent of all computers.

More than one in 10 sites with fewer than 1,000 employees (13 percent) have more than 1,000 Macs installed. Survey respondents listed many reasons for owning these extra Macs: Some Macs are dedicated to specific tasks, power users work on more than one machine, Macs are part of employee computer pools, and Macs are used as file servers and test machines.

Purchase plans. All told, MacWEEK sites plan to buy more than 50,000 Macs in the next 12 months, an average of 254 per site. Desktop Power Macs are cited most often (84 percent), followed by PowerBooks (68 percent) and Apple PowerPC-based Workgroup Servers (31 percent). Other Macintosh models still being offered (Quadras, Performas and LCs) figure in purchase plans at rates lower than 10 percent.

Looking at purchase plans by machine rather than site, desktop Power Macs make up 65 percent of planned purchases; PowerBooks, 17 percent; Duos, 6 percent; and Apple Workgroup Servers, 3 percent. Based on these buying plans, a rough calculation would find Power Macs moving from 11 percent to 19 percent of the installed base by the time next year's survey is conducted.

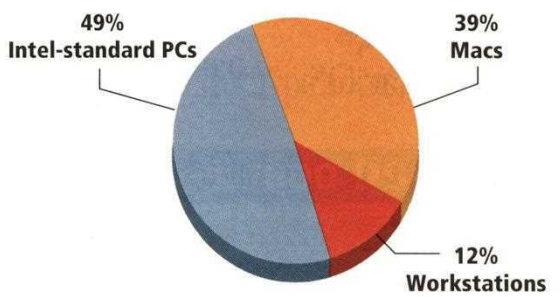
Government and military sites are planning to buy a disproportionately high number of Macs. These sites, the most numerous type of site within the top 20, make up only 16 percent of the total MacWEEK 200. The average government and military site plans to buy 386 Macs, compared with 232 per site for private industry.

Clones. In general, sites show a cautious attitude toward Mac clones; 46 percent are likely to purchase clones, while 53 percent are not. (The first Mac clones from Power Computing Corp. were released during interviewing for the MacWEEK 200 survey.)

Government and military sites, which as a matter of course put purchasing out to competitive bids, are more inclined to purchase clones: As a group they are 30 percent more likely to purchase clones than private business is. The likelihood of clone purchasing also relates to the volume of Macs planned for purchase: Sites likely to buy clones plan to buy an average of 267 machines, above the norm of 254 for the MacWEEK 200 as a whole (see story, Page 50).

The sites likely to purchase clones are considering the three manufacturers included in the survey — Power Computing,

Microcomputer and workstation breakdown



Base: All computers installed at MacWEEK 200 sites.

Radius Inc. and DayStar Digital Inc. — at similar rates. In terms of the actual numbers of machines being considered for purchase, Power Computing leads with an average twice as high as its more high-end competitors.

Considering the impact of clones on Mac purchase plans, the majority of sites likely to buy don't expect to replace Apple Macs with clones. But those that are considering replacing Apple Macs with clones favor those manufacturers offering high-end configurations, namely Radius and DayStar.

Finally, showing a healthy skepticism, sites overwhelmingly thought Mac-clone compatibility certification should be the responsibility of Apple (71 percent), while only 3 percent thought clone vendors themselves should certify compatibility. □

	SITE	LOCATION	MACS	NON-MAC PCS	WORK-STATIONS
1	**Lawrence Livermore National Laboratory**	Livermore, CA	13,150	10,500	3,200
2	**Lockheed-Martin Missiles & Space***	Sunnyvale, CA	9,880	6,335	2,475
3	**Los Alamos National Laboratory**	Los Alamos, NM	8,100	13,000	32,000
4	**Savannah River Site: Bechtel Corp.**	North Augusta, SC	6,550	7,000	1,200
5	**NASA Goddard Space Center***	Greenbelt, MD	5,800	8,000	1,000
6	**National Institutes of Health**	Rockville, MD	5,725	12,000	1,000
7	**Jet Propulsion Laboratory**	Pasadena, CA	5,650	5,650	1,500
8	**Sandia National Laboratories***	Albuquerque, NM	4,750	6,000	1,000
9	**Deloitte & Touche**	Hermitage, TN	4,500	12,000	11
10	**Hearst Publications**	New York, NY	4,360	2,000	5
11	**State of California Employment Development Department**	Sacramento, CA	4,300	6,000	200
12	**Naval Air Warfare Center***	Point Mugu, CA	4,200	2,100	1,000
13	**NASA Ames Research Center***	Moffett Field, CA	4,000	2,000	1,500
14	**EG&G Rocky Flats Inc.***	Golden, CO	3,965	4,000	24
15	**NASA Johnson Space Center***	Houston, TX	3,899	7,382	0
16	**McDonnell Douglas Corp., Space Systems Division**	Huntington Beach, CA	3,714	550	0
17	**Amgen Inc.**	Thousand Oaks, CA	3,400	624	300
18	**Mayo Clinic**	Rochester, MN	3,326	8,000	200
19	**Lockheed-Martin Energy Systems Inc.***	Oak Ridge, TN	2,950	18,050	750
20	**Lawrence Berkeley National Laboratory**	Berkeley, CA	2,907	2,050	425
21	**The Mount Sinai School of Medicine**	New York, NY	2,889	600	28
22	**TRW Avionics & Surveillance Group**	Sunnyvale, CA	2,876	100	650
23	**J.P. Morgan & Co. Inc.**	New York, NY	2,785	8,000	1,500
24	**Procter & Gamble Co.**	Cincinnati, OH	2,730	1,000	3
25	**E.I. Du Pont de Nemours & Co. Inc.***	Newark, DE	2,445	2,445	0
26	**E.I. Du Pont de Nemours & Co. Inc., Experimental Station***	Wilmington, DE	2,437	1,000	200
27	**TransCanada PipeLines Ltd.**	Calgary, AB	2,360	374	7
28	**Newbridge Networks Corp.**	Kanata, ON	2,335	620	780
29	**Aerospace Corp.**	El Segundo, CA	2,165	3,376	500
30	**Federal Express Corp.**	Memphis, TN	2,148	3,190	225
31	**E-Systems Inc.***	Garland, TX	2,080	1,000	2,000
32	**Du Pont Merck Pharmaceutical Co.**	Wilmington, DE	2,072	375	20
33	**KPMG Peat Marwick***	New York, NY	2,045	2,000	2
34	**U.S. Navy, NRAD (Naval Command & Control Ocean Surveillance Testing & Eval., R&D)***	San Diego, CA	2,000	7,800	1,500
35	**John Deere & Co.: Waterloo Works**	Waterloo, IA	1,991	761	100
36	**Nortel Communications, Division of Northern Telecom Inc.***	Richardson, TX	1,940	900	1,550
37	**Computer Sciences Corp.**	Norwich, CT	1,938	1,200	600
38	**Networth Inc.**	Rockland, MA	1,930	400	60
39	**University of Texas, Anderson Cancer Center**	Houston, TX	1,926	3,000	80
40	**Thomas Jefferson Hospital & University**	Philadelphia, PA	1,845	1,855	0
41	**Bose Corp.**	Framingham, MA	1,780	280	200
42	**Ernst & Young***	New York, NY	1,760	2,500	0
43	**Argonne National Laboratory**	Argonne, IL	1,751	1,500	400
44	**Pfizer Inc.**	Groton, CT	1,750	2,100	50
45	**Dartmouth Hitchcock Medical Center**	Lebanon, NH	1,695	50	1
46	**Province of Ontario Legislature: New Democratic Party Caucus**	Toronto, ON	1,670	10	0
47	**L.L. Bean Inc.**	Freeport, ME	1,610	200	15
48	**Rhode Island Hospital**	Providence, RI	1,577	1,700	4
49	**Monsanto Co.**	St. Louis, MO	1,550	3,000	75
50	**Harris Corp.**	Melbourne, FL	1,529	4,855	350

Companies with multiple sites.

What sites are, why they change

The MacWEEK 200 and Education 50 rankings are based on the number of Macintoshes at a site, not within an entire company or organization. The MacWEEK 200 definition of a "site" is all the buildings and offices where the individual works but not those outside a 10-mile radius.

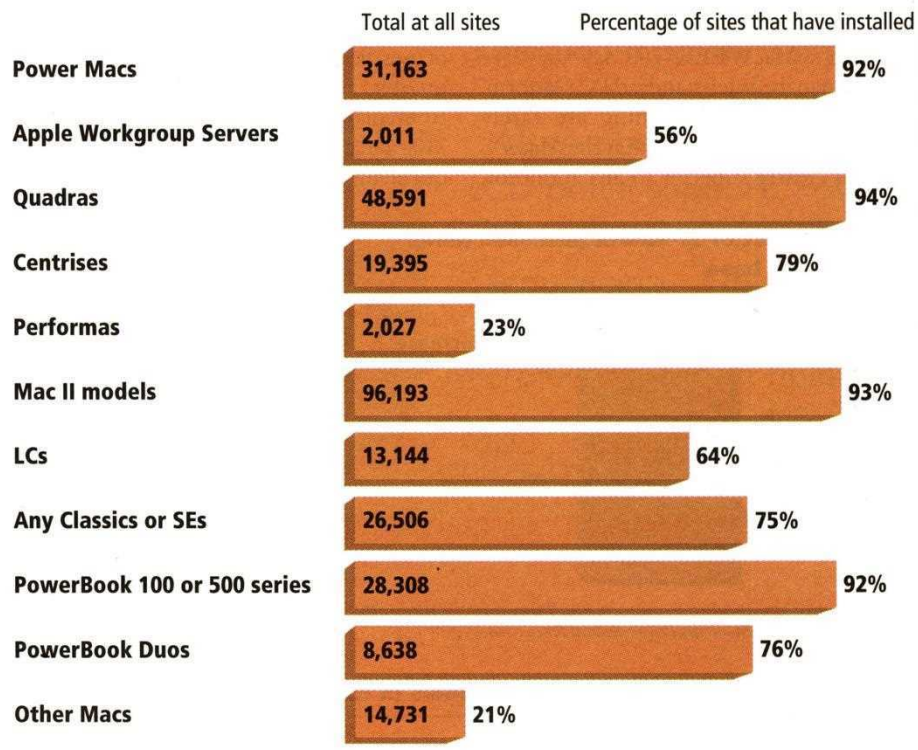
One of the challenges in conducting the MacWEEK 200 and Education 50 site surveys is maintaining consistency from year to year. This year, turnover among sites cooperating with the survey was high because of changes in the nature of their businesses.

Nevertheless, some broad comparisons can be made among the 99 sites retained from last year. Using last year's figures as a base, we asked sites reporting any increase or decrease over 10 percent in the number of Macs installed to explain why.

The largest group, 32 sites that reported large increases in their Macintosh installed base, most often gave "expansion of the Mac platform" or "switch to PowerPC" as the reason. Among the 20 sites that reported large decreases in the number of Macintoshes, business events such as government cutbacks, corporate downsizing, and military base closures were frequently cited for their drop of 25 percent. The balance of sites had no substantial change in their number of Macintoshes or attributed the change to a technical reason having to do with the way the Macs were counted.

All in all, the 99 sites reported a net increase of 7 percent in the number of Macs compared with their 1994 figures.

Sites with various Mac models installed



Base: All MacWEEK 200 sites.

Methodology

The 1995 MacWEEK 200 and Education 50 are based on telephone surveys that took place from April 10 through June 7. Potential MacWEEK 200 and Education 50 sites were identified from computer-generated lists of the largest Macintosh sites from MacWEEK subscriber files.

Respondents were administered a standard questionnaire after being screened to ensure they were the individuals with the most accurate information about the Macintosh installations at their sites. Only individuals with the most accurate information completed the interviews. Interviews were completed with 87 percent of sites contacted.

This survey required about 5,500 phones calls to complete almost 900 interviews at qualified business, government and education locations. Sites were excluded from the survey if their principal product or service is the manufacturing or sale of microcomputer products.

Parallax Marketing Research Inc. and San Francisco Field Service, independent market research companies in San Francisco, were responsible for all survey operations. Procedures followed established market research standards.

Contributors

This year's MacWEEK 200 was completed under the research direction of Neil Karlin, group research director for Mac publications at Ziff-Davis Publishing Co., and under the editorial direction of Anita Malnig, executive editor/features at MacWEEK. Additional editorial work was done by Catherine LaCroix, MacWEEK senior editor. Logo design provided by Willandson + Associates. Nevin Berger, MacWEEK graphics associate, created all the charts.

Large sites fight Windows 95 marketing blitz

By Rochelle Garner

CHRIS STEWART/BLACK STAR

Ken Bohlen, manager of computing systems at John Deere & Co., says Macs are integral to the process of making tractors, yet the company pays attention to other platforms.

Like a barometer showing unsettled weather, the latest MacWEEK 200 suggests partly cloudy days ahead for Apple. Sure, there will be plenty of sunshine — radiating from the phenomenal appeal of the Power Macs. But that success could be overshadowed by several factors, including doubts about Apple's ability to out-market the mighty Microsoft Corp. machine now cranking up for Windows 95. Already, several top sites that rose higher in this year's MacWEEK 200 say they are switching to the Intel-standard PC platform.

Even sites increasing the number of Macs must face the Windows dilemma.

The reasons for switching are rarely technical. In fact, all agree that the Mac OS remains clearly superior to any found on the PC platform, accompanied by its easier training and better support. But the mass of applications supporting the Pentium/Windows juggernaut is causing a number of sites to rethink their information technology infrastructure.

Making a switch

That's the case at Du Pont Merck Pharmaceutical Co. Up from No. 148 last year to No. 32 this year, the site applies Power Macs to a broad range of uses. Secretaries at Du Pont Merck's headquarters use Power Mac 7100s with CD-ROM players. Scientists engaged in R&D use 7100 and a few 8100 systems to run DNA sequencing, research HIV and model new drugs. In the labs, Macs handle lab instrumentation.

But that growing mass of Windows-based applications has given Intel machines an equal presence at Du Pont Merck, based in Wilmington, Del. "We are watching the industry, and we see that for many years the Mac had a corner on usability, and we see that corner being eroded," said a Du Pont Merck representative. That means that, although the company is not replacing its Macs, it's bringing in Intel machines at a increasing rate for use in the labs, by scientists and, especially, for running the business of Du Pont Merck.

"As new applications come along, we serve them with the appropriate platform, and increasingly we find that to be Intel," the representative said. "We believe it's the one that will carry many of our applications into the future. But there are strong cases for a Mac solution, and we will continue to take advantage of the Mac in those cases."

At State Farm Insurance Cos., the Claims Litigation division isn't just complementing Macs, it's replacing them with PCs. Rising to No. 57 from last year's 107 ranking, the Bloomington, Ill., site bought old IIci, IIcx and IIsi models as a stopgap in anticipation of a wholesale switch — not to Windows but to OS/2. The reason for this unorthodox decision: State Farm's vast array of IBM mainframes. "The central IS organization valued integration of machines over the Mac's far superior human interface," said a representative in the Claims Litigation division. "OS/2's strength is in its integration capabilities," he said. "From my perspective, that's its only strength."

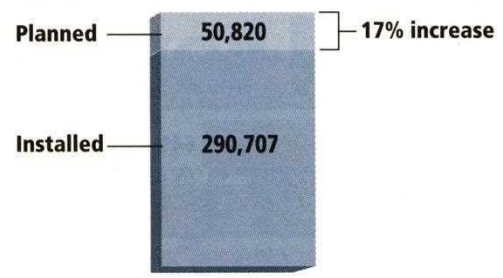
Even so, the company is progressing at full steam on its OS/2 direction. According to State Farm spokesman Matt Sorensen, the Claims Litigation division hopes to complete its transition by this time next year — with the rest of the company not far behind. State Farm has not yet decided whether to sell its used Macs or donate them to schools.

Not easy to part

If other companies offer any indication, it won't be so easy getting users to part with

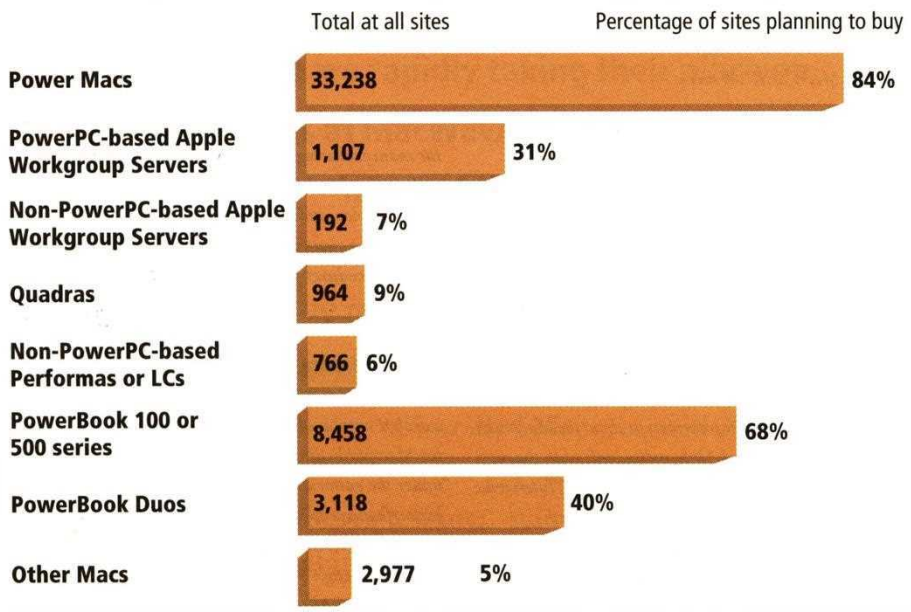
See Dilemma, Page 46

Growth effect of 12-month purchase plans on installed base



Base: Total number of Macs installed or planned for purchase.

Sites planning to buy various Mac models in the next 12 months



Base: All MacWEEK 200 sites.

	SITE	LOCATION	MACS	NON-MAC PCS	WORK-STATIONS
51	Motorola Inc., Paging Products Group*	Boynton Beach, FL	1,523	246	632
52	Battelle Pacific Northwest Laboratories	Richland, WA	1,494	5,000	400
53	Netstrategy	Toronto, ON	1,480	1,300	100
54	Booz, Allen & Hamilton Inc.*	McLean, VA	1,457	1,975	100
55	Raytheon Co.	Tewksbury, MA	1,450	2,000	50
56	Medical University of South Carolina	Charleston, SC	1,435	2,800	40
57	State Farm Insurance Cos.	Bloomington, IL	1,400	14	0
58	Syntex USA Inc.	Palo Alto, CA	1,343	1,343	50
59	SRI International	Menlo Park, CA	1,321	800	250
60	Johns Hopkins Medical Institutions	Baltimore, MD	1,315	4,000	400
61	U.S. Peace Corps	Washington, DC	1,310	15	4
62	Home Box Office, Subsidiary of Time Warner Inc.	New York, NY	1,306	200	20
63	General Electric Co.	Rockville, MD	1,300	1,300	1,300
64	Bolt, Beranek & Newman Inc.	Cambridge, MA	1,298	500	600
65	State of Kansas	Topeka, KS	1,295	12,000	15
66	Science Application International Corp.	San Diego, CA	1,292	2,400	10
67	U.S. Pentagon	Washington, DC	1,290	10,000	1,100
68	Tandem Computers Inc.	Cupertino, CA	1,250	2,500	150
69	EG & G Rocky Flats Inc.*	Westminster, CO	1,245	75	50
70	Sandia National Laboratory*	Livermore, CA	1,210	700	500
71	Hallmark Cards Inc.	Kansas City, MO	1,200	4,800	9
72	AT&T Bell Laboratories Inc.	Holmdel, NJ	1,190	1,500	700
73	Hughes Aircraft Co. Missile Systems Co.*	Tucson, AZ	1,186	5,020	80
74	ARCO Alaska Inc.*	Anchorage, AK	1,170	100	100
75	Charles Stark Draper Laboratory Inc.	Cambridge, MA	1,149	719	260

**Companies with multiple sites.*

BLUE BUILDING BLOCKS

BLUE STORM — Performance Drive

BLUE LIGHTNING — SCSI Accelerators

BLUE SPARK — Accelerated Storage

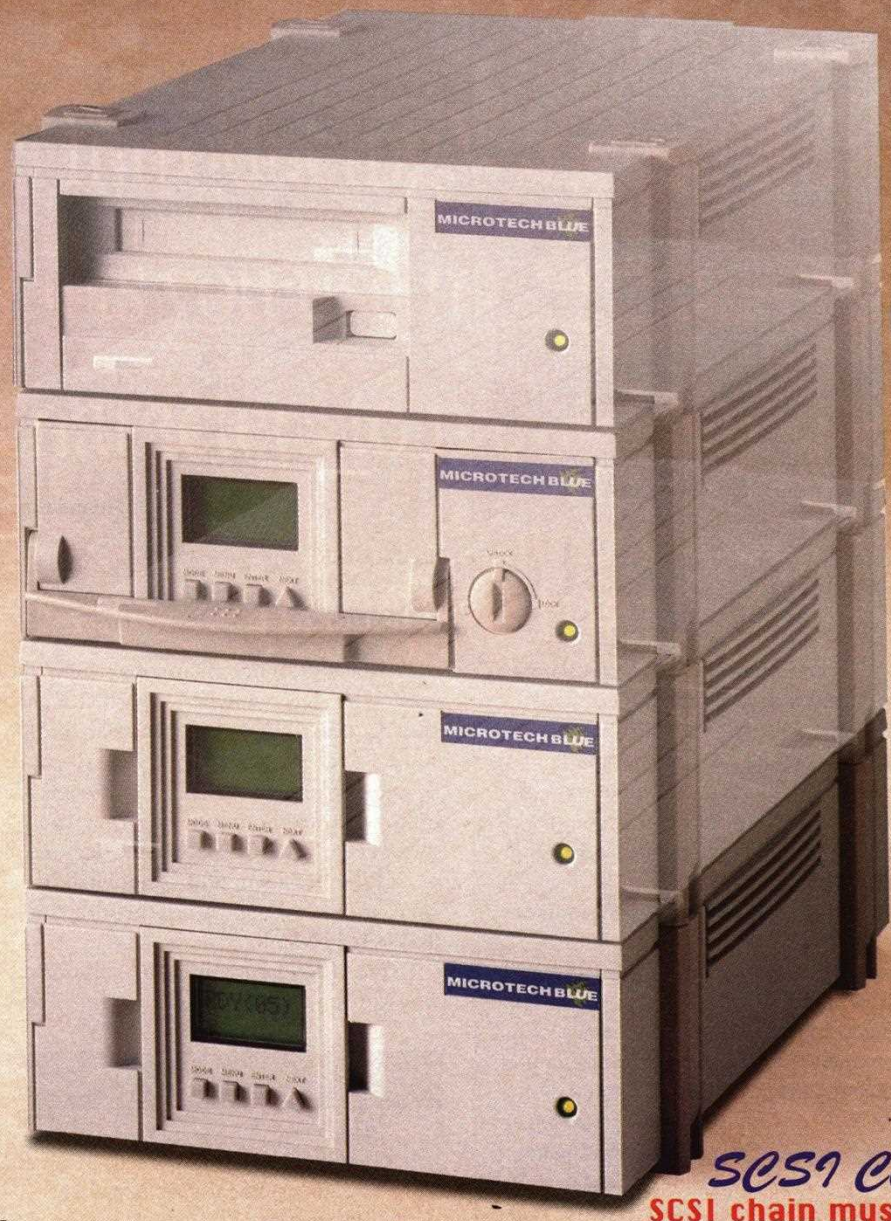
BLUE STREAK — RAID 0 and 1

BLUE STREAM — DAT Tape Back-Up

INTRODUCING THE BLUE LINE

The BLUE Line is an advanced storage architecture that goes beyond the current paradigm for storage design. Each component is engineered for the rigors of a graphics or digital video production environment. Attention is given to every detail that maximizes SCSI stability and data throughput.

Build with BLUE! Protection investment is the cornerstone of our offering. BLUE can begin with a single drive and evolve into a complete system of fixed, removable, and DAT tape devices. To increase your productivity add our PCI or NuBus accelerators and state-of-the-art RAID 0 and 1 solutions. Thinking about speed? Think about BLUE!



BLUE Line Design Enclosure

It's not just a better box. It's a better idea. Interlocking BLUE Line cases — each with four-inch power jumper — make rock-solid vertical or horizontal stacks a snap to build and to run off a single cord. Side-mount power-supply vents heat away from the drive. User-modifiable, front-mount LCD panel supports Power-Up, SCSI addressing, and Power Up sequencing. Need tech help? The LCD even provides Microtech's support number. All this plus enhanced data channel and subsystem design mean true BLUE Line excellence.

REMOVABLE OPTIONS

BLUE Line fixed drive solutions can also be configured as removable, shuttle-based units mounted on front-removable sleds, providing up to 4GB of Fast/Narrow or Fast/Wide portable storage. Available separate docking stations enable you to transfer gigabytes of data without unplugging a single cable — great for digital video, pre-press, and graphics applications.

Microtech International, Inc. . . .

Presents the Experts in Storage and Memory Seminars at MacWorld Boston —
Daily MacWorld Seminar Schedule:

11:00 & 2:00 • How to buy storage for Digital Video production — *a guide for the advanced and entry level user.*

11:30 & 2:30 • RAID for the rest of us — *Understanding RAID storage solutions with applications in prepress and publishing.*

Noon: Digital Photography — *the FlashFilm and PC card (PCMCIA) storage connection.*

12:30 & 3:00 • SCSI VOO DOO — *Top ten tips 'n tricks for troubleshooting storage problems.*

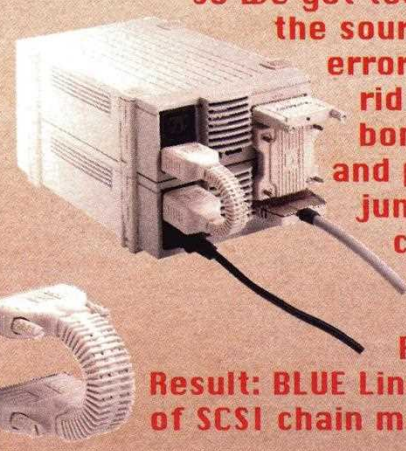
1:00 & 3:30 • Everything you need to know about removable storage — *from optical media to PC Card (PCMCIA).*

Mac OS

INGRAM MICRO

SCSI Chain Improvements

SCSI chain mysteries were tough on you. So we got tough on SCSI chain design — the source of most peripheral errors and problems. We got rid of nearly all internal ribbons and peripheral cables and put in circuit boards, jumpers, and jumper packs, cutting cable length by nearly 90% — from 21 feet to 28 inches in a seven-device stack. Then we added Forced-Perfect Termination.

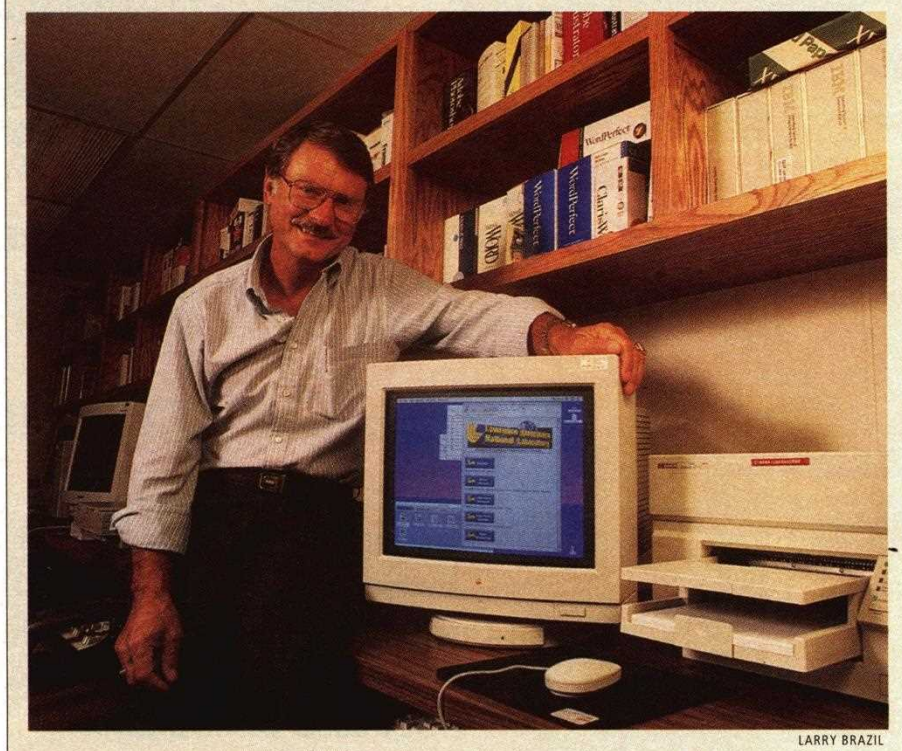


Result: BLUE Line products take the mystery out of SCSI chain management.

BLUE

MICROTECH INTERNATIONAL, INC.

1-203-468-6223 **1-800-570-9539**



LARRY BRAZIL

Dieter Fuss, who oversees 13,150 Macs at Lawrence Livermore Laboratory, says the Mac's ease of use is slowly eroding as operating systems on Intel machines catch up.

Lawrence Livermore No. 1

One look at the numbers says it all. Lawrence Livermore National Laboratory has a love affair with the Macintosh. And yet, despite adding 3,200 Power Macs and PowerBooks to the lab's computer roster, Dieter Fuss wants Apple to hear one message loud and clear: "Don't take us for granted."

Fuss has reason for his discontent. As the distributed computing support program leader, he said he thinks Macs have become too complex for their own good.

"It appears to us, and we help support Macs here, that the Mac's ease of use is slowly disappearing, while the ease of use of IBM machines may be slowly appearing," Fuss said.

Yes, you read that right. The man in charge of supporting Macs at the No. 1 MacWEEK 200 site said he believes that the Mac is losing its edge. But Fuss doesn't just blame Apple. "I think it's a fair statement that both Apple and Microsoft [Corp.] aren't doing nearly enough to make Macintosh applications work as well as they have in the past," Fuss said. "When it takes Word 6 nearly 40 seconds to get ready on the Mac but only five seconds on the [Intel-standard] PC, I think both Apple and Microsoft have a problem."

Obviously, Fuss is disappointed. He's also frustrated to the point that he's examining other platforms, just in case. Such platforms include IBM's OS/2, Windows NT and, of course, Windows 95. But don't get the impression that the lab is going to switch anytime soon. The responsibility of choosing — and buying — desktop computers falls to 300 separate organizations within the government laboratory. Such decentralization discourages wholesale change. What's more, Fuss, as lead support manager, is not in the position to dictate buying decisions. He can, however, stop supporting certain applications.

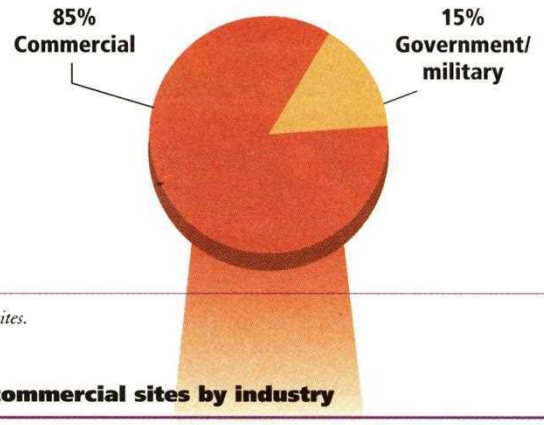
"For the lab to pick a different solution would require several years and some very good reasons as well," Fuss said. "After all, we have 8,000 users who would have to be retrained. But if there's a long-term change that is cheaper, or better performing, we will take a look at that platform. Every year we evaluate what makes business sense."

For now, and some time to come, the lab has no plans to drop the Mac.

The criteria for that evaluation: life-cycle costs, maintenance costs and ease of use — all elements that have traditionally leaned toward the Mac. So what's the problem? Upgrades, primarily. "Installing applications takes a lot more knowledge than it used to," Fuss said. "Today you have to de-install things to make sure they work right." That's frustrating work in an environment of 8,000 users — many with more than one Mac and all differently configured from each other.

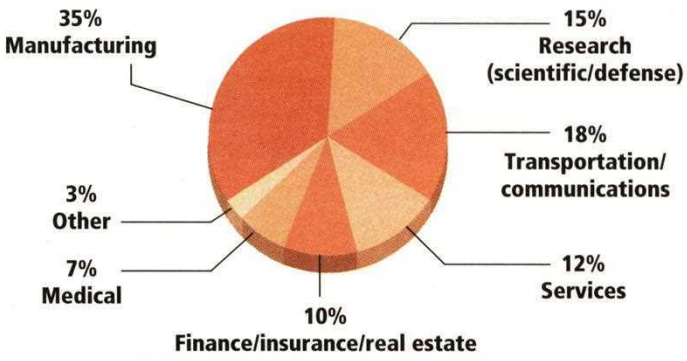
For now, and for some time to come, the lab has no plans to drop its first love. But Fuss is definitely keeping his options open. "Our inclination is to stick with Apple as long as everything works well," he said. "But not everything is working as well as it should. Our moving to a different solution is not completely out of the question." — By Rochelle Garner

MacWEEK 200 by business



Base: All MacWEEK 200 sites.

MacWEEK 200 commercial sites by industry



Base: MacWEEK 200 commercial sites.

Dilemma

From Page 44

their Macs. "I'm not aware of a single Mac user who has switched," said Richard Lloyd, describing the two-year period since Raychem Corp. (No. 83) issued its edict to replace Macs with PCs. "People are holding on to them any way they can — there's even a black market in Macs, shall we say," said Lloyd, who is network manager at Raychem's main corporate and R&D site in Menlo Park, Calif.

In fact, Lloyd said, users are still finding ways to upgrade their old machines and even buy new Macs — especially since Raychem hasn't allotted funding for PC replacements. What has changed is that all purchase orders must be signed by a vice president for approval. "Whether you get your Mac depends on how tame your vice president is," Lloyd said. "Sometimes you get it, sometimes you don't."

What users at Raychem don't get is updated Macintosh software. Today, Mac users make do with 2-year-old versions of their Microsoft applications, such as Word and Excel, as well as cc:Mail. "Luckily, the

See Dilemma, Page 48

	SITE	LOCATION	MACS	NON-MAC PCS	WORK-STATIONS
76	Rand Corp.	Santa Monica, CA	1,148	530	150
77	Perkin-Elmer Corp., Applied Biosystems Div.	Foster City, CA	1,135	300	25
78	Oregon Health Sciences University	Portland, OR	1,111	3,500	100
79	Pizza Hut Inc.	Wichita, KS	1,105	100	20
80	Northrop Grumman Corp.	Hawthorne, CA	1,104	1,500	400
81	Electric Power Research Institute	Palo Alto, CA	1,076	425	22
82	Lockheed Idaho Technologies Corp.	Idaho Falls, ID	1,070	5,000	800
83	Raychem Corp.	Menlo Park, CA	1,060	3,300	25
84	State of Texas Comptroller of Public Accounts	Austin, TX	1,033	1,133	1,134
85	Dorsey & Whitney	Minneapolis, MN	1,030	15	4
86	Computer Curriculum Corp.	Sunnyvale, CA	1,026	744	0
87	KPMG Peat Marwick Thorne*	Toronto, ON	1,018	70	2
88	Citicorp International Communications Inc.	San Antonio, TX	1,013	700	200
89	Health Partners	Minneapolis, MN	1,009	620	7
90	United Airlines	San Francisco, CA	1,002	2,500	5
91	Dow Chemical Company Inc.	Baton Rouge, LA	1,000	1,300	10
92	University of Chicago Hospitals	Chicago, IL	1,000	275	275
93	BP Exploration Alaska Inc.*	Anchorage, AK	1,000	50	100
94	Raynet Corp.	Menlo Park, CA	1,000	25	300
95	Aluminum Co. of America	Alcoa Center, PA	987	792	107
96	Chicago Medical School and Finch University of Health Services	No. Chicago, IL	980	275	4
97	Hughes Aircraft Co.*	Arlington, VA	973	400	700
98	Bank of Bermuda	Hamilton, Bermuda	973	150	25
99	Westinghouse Electric Corp.	Baltimore, MD	950	3,000	200
100	GTE Government Systems Corp.	Mountain View, CA	945	350	25

**Companies with multiple sites.*

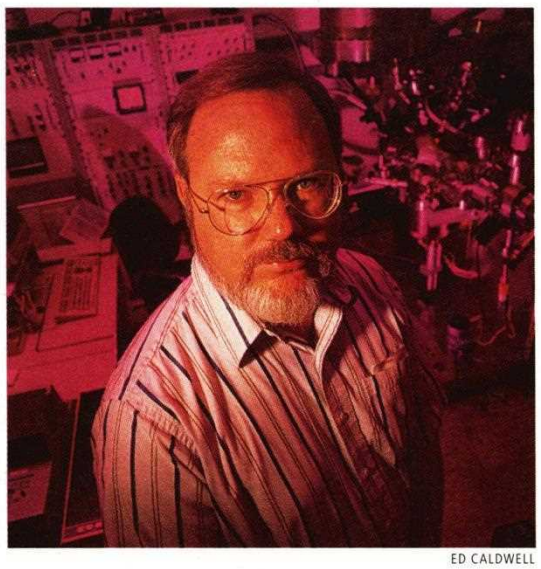
Introducing Windows 95.
It lets you use more than eight
characters to name your files.

Imagine that.

Dilemma

From Page 46

applications we use are pretty interoperable, so it hasn't become a big issue yet," Lloyd said. That's particularly lucky for Lloyd and his crew, who now must support both platforms. "The group I head has found that the amount of support for PCs is much greater than for Macs," Lloyd said.



ED CALDWELL

Richard Lloyd, network manager at Raychem Corp., said people are not giving up their Macs, but they can no longer get upgraded software, such as Microsoft Word.

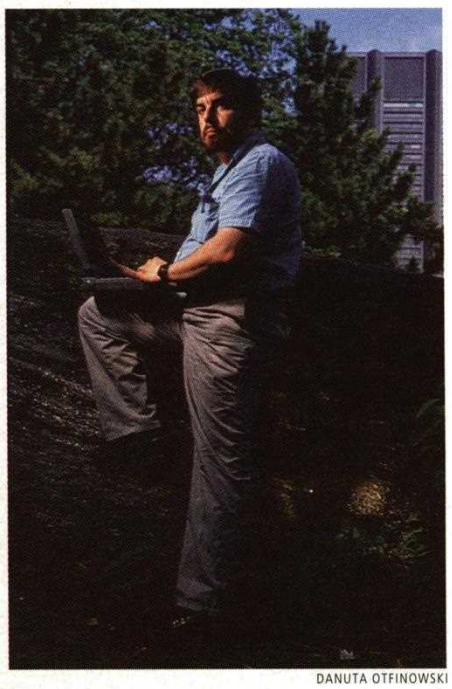
Standing firm

Easier support translates into less expensive support. At New York's Mount Sinai School of Medicine (No. 21), that fact has practically kick-started a run on Power Macs and PowerBooks. That's no small feat in an organization that leaves the purchasing decision up to individual departments and workgroups.

"Four months ago, our Student Affairs department completely replaced all of its DOS/Windows machines with Macs," said Lou Hernandez, Macintosh systems specialist for Mount Sinai's School of Medicine, where most of Mount Sinai's Macs are housed. "That switch came about because the Student Affairs system manager pushed hard for the Mac," Hernandez said. "The rate of adding Macs here is definitely increasing."

In fact, it's practically a boom — what with falling prices and increasing speeds of the new RISC-based systems. Today, Apple's machines can be found across the board at the School of Medicine, Hernandez said. Macs are being used for many things, including standard office automation, statistics, data acquisition, lab instrumentation and interactive curricula.

But not everything has been hunky-dory at the school. Power Mac shortages, long waiting periods and frustration colored users' experiences earlier this year. At times, departments even resorted to renting Macs because people didn't have computers — an expensive proposition. "Apple really needs to get better at meeting demand, at providing DOS compatibility cards and at communicating what it does better than anyone else," Hernandez said. "Apple's marketing has been terrible."



DANUTA OTFINOWSKI

Lou Hernandez, Macintosh systems specialist at New York's Mount Sinai School of Medicine, says the Mac population has increased, but waiting for Power Macs was frustrating.

Marketing. That word came up time and again among Mac managers at the top MacWEEK sites. The reason: "Apple's marketing strategy appears to be fragmented, with the result that corporate America has written them off — particularly with Windows 95 around the corner," said Ken Bohlen, manager of computer systems at No. 35 John Deere & Co.: Waterloo Works (see Guest Editorial, Page 38). "I consider Apple at fault for not hitting hard on the Mac's lower total cost of ownership."

It's a big issue. The Gartner Group — considered by many in IS to be the top source for management information — figures that by the time you add up the costs of training, power-user support, maintenance and general futzing around, a single PC costs up to $40,000 over a five-year period. "I used the Gartner model on total-cost computing to figure the Mac allowed minimal futz factor and maximum user productivity," Bohlen said.

Lower total costs of ownership

Because of those calculations, Macs have become integral to the business of building and selling tractors at John Deere's Waterloo, Iowa, site. One client-server application, connecting to Oracle at the back end, handles the corporate procurement/purchasing system. Another, which works with DB2 on IBM 3090 mainframes, presents QuickTime movies to people on the assembly floor. Click on an engine part, for example, and the movie shows precisely how two pieces need to fit together. In another part of the factory, the same system describes — with voice and video — the critical amount of torque to apply when assembling transmissions. Macs also integrated directly with shop-floor machines, allowing operators to verify visually whether mills, lathes and other devices are lined up properly.

Bohlen is decidedly bullish on the Mac. But as a responsible businessman, he can't afford to ignore other platforms, either. So, despite the Mac's dominance at John Deere, he's making sure that programmers writing new client-server applications will develop objects for Mac, Intel and Unix machines. And he's also investigating Windows NT, Windows 95 and Unix. His prognosis: "Microsoft has made great strides, but Windows 95 still doesn't integrate as easily as the Mac does. If Apple doesn't identify those weaknesses, I'm afraid they will have missed a real opportunity with corporate America."

> Despite the Mac's dominance at John Deere, programmers writing new client-server applications develop objects for Mac, Intel and Unix.

Client-server

Apple hasn't missed its opportunity at Amgen Inc. The site (No. 17) has been hiring at the rate of almost 50 people a month. Most new hires get a Power Mac 7100 equipped with 24 Mbytes of RAM and a 500-Mbyte hard drive as the standard configuration. Obviously, the Thousand Oaks, Calif., biotechnology/pharmaceutical company relies on Macs for some cutting-edge applications. "The Mac is not just a back-office machine here," said Bruce Whetstone, Amgen director of corporate information technologies. "It's our primary desktop."

Consider Amgen's Clinical Archival Retrieval System (CARS). A full-blown client-server application based on a Micro Dynamics Ltd. MARS system, CARS stores images of clinical records for access by anyone, anywhere, on a Mac. "That's important because the original copy of any clinical trial must be kept secure in its original format," Whetstone said. "Rather than push tons of paper copies of those records, we would rather push electronic images."

Another client-server application, called Clinical Information Management System (CIMS), holds an Informix Software Inc. database of every trial Amgen clinicians are conducting worldwide. "That can save time and money, since we don't want clinical specialists running trials on a specific symptom that is also being studied in the next country over," Whetstone said.

In fact, Amgen is pushing the envelope of how Macs can further the business of developing and selling prescription drugs — even developing a system to read X-rays and count the number of cells on a slide.

But while Macs are the pre-eminent machines for all tasks at Amgen, there could be a glitch. "The software we use on midrange systems for applications like manufacturing, finance and accounting are all evolving to client-server," Whetstone said. "Unfortunately, the vendors of those systems tend to focus on Windows. And if we want to move ahead with their client-server software, we have to provide Windows clients. That means either switching people to Intel machines or supplying DOS compatibility add-in cards."

So far, Whetstone is buying those cards from Orange Micro Inc. of Anaheim, Calif., and other board companies. But if he had his druthers, Apple would be his supplier of choice. Think of it as a ready market for Apple — with nothing but blue skies ahead. □

	SITE	LOCATION	MACS	NON-MAC PCS	WORK-STATIONS
101	**Honeywell Inc., Space Systems Division***	Clearwater, FL	943	258	18
102	**Motorola Inc., Government & Systems Technology Group***	Scottsdale, AZ	920	2,500	650
103	**Stanford Linear Accelerator Center**	Palo Alto, CA	905	500	50
104	**Province of British Columbia, Ministry of Environment, Lands & Parks**	Victoria, BC	887	850	29
105	**City of Hampton**	Hampton, VA	878	31	15
106	**Liberty Mutual Insurance Co.**	Dover, NH	867	100	2
107	**Becton Dickinson & Co.**	San Jose, CA	855	250	100
108	**Magnavox Electronics Systems Co.**	Fort Wayne, IN	848	1,060	400
109	**SmithKline Beecham**	King of Prussia, PA	842	3,000	4,500
110	**State of California, Department of Motor Vehicles**	Sacramento, CA	836	1,500	6
111	**E-Systems Inc.***	Greenville, TX	835	2,000	100
112	**Avis Rent-A-Car Systems***	Tulsa, OK	825	20	4
113	**Nike Inc.**	Beaverton, OR	824	1,500	50
114	**Allergan Inc.**	Irvine, CA	823	800	20
115	**Ameritech Services Inc.**	Hoffman Estates, IL	820	820	50
116	**Telesat Canada**	Gloucester, ON	816	0	0
117	**Delco Electronics Corp.**	Kokomo, IN	815	2,200	250
118	**Houghton Mifflin Co.**	Boston, MA	815	100	50
119	**Dow Chemical Co.**	Freeport, TX	800	3,525	450
120	**Harris Bankcorp Inc.**	Chicago, IL	800	3,200	70
121	**Trans Alta Utilities Corp.**	Calgary, AB	800	170	40
122	**Genzyme Corp.**	Cambridge, MA	792	100	5
123	**Schering-Plough Corp. Research Institute**	Kenilworth, NJ	785	1,300	20
124	**BBDO, N.Y.**	New York, NY	765	10	3
125	**Bell Atlantic Corp.**	Arlington, VA	755	1,245	10

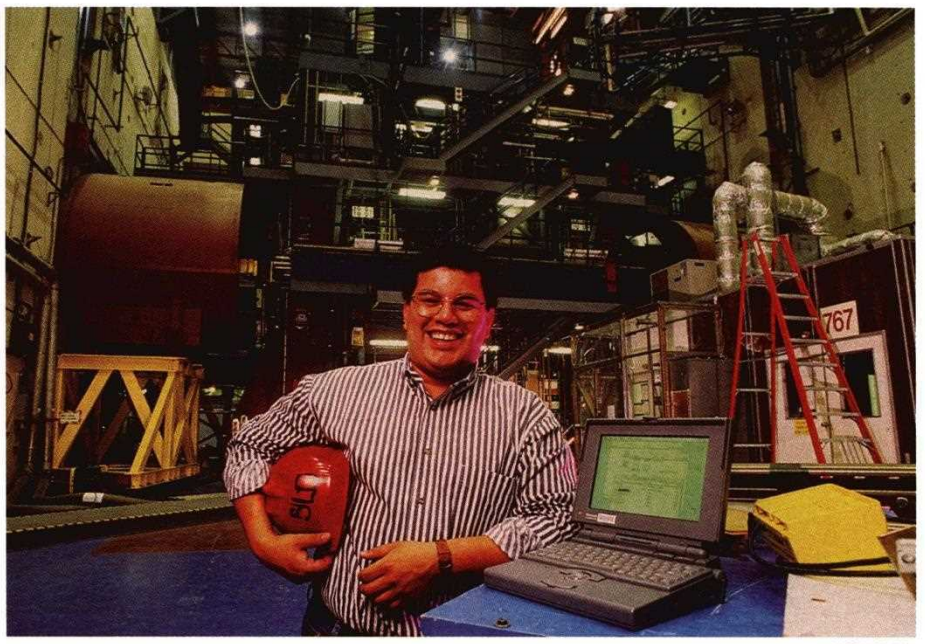
**Companies with multiple sites.*

Introducing Windows 95.
It lets you drop files anywhere
you want on the desktop.

Imagine that.

Not clamoring for clones, industries like Apple brand

By Anita Malnig



LARRY BRAZIL

Brian Lalor, systems analyst at the Stanford Linear Accelerator Center, said he believes a Power Computing clone will give him more for his money, such as more memory and hard drive space.

The three current Macintosh clone vendors were confident that well over half of the MacWEEK 200 would buy their Mac clones in the next year. But the 1995 survey shows a surprising 53 percent are not likely to buy at all.

Better service and price are why some want clones and others stay with Apple.

Why the reluctance? From most appearances the marketplace had been clamoring for clones.

Those who answered "not likely" to buy Mac clones cited service and support as the primary reasons for sticking with the Apple brand, followed by not enough of a price advantage, questions of companies' stability and simply not wanting to be early adopters.

But those likely to buy clones (46 percent) listed many of the same reasons for buying a clone. They expect better service and see a price advantage, and they like what they know about first Mac clone vendors, DayStar Digital Inc. of Flowery Branch, Ga.; Power Computing Corp. of Milpitas, Calif.; and Radius Inc. of Sunnyvale, Calif.

"I'm hoping Radius can offer better service and information [because] they're a smaller company," said Jim Quraishi, director of pre-press at Hearst Publications in New York (No. 10), publisher of 16 major magazines, including Cosmopolitan and Good Housekeeping. Because of the heavy art and color-correction work at Hearst, Quraishi said he plans to buy Radius clones as supplements to the Power Macs. Yet Quraishi voiced a concern common to many: "What's most important is what happens when they break; we can order parts directly from Apple and get them the next day. How easy will it be to get those parts [from a clone maker]?"

Others are directly critical of Apple's support and don't consider support a reason for not buying clones. "Apple is not very good with training its distribution lines on how to provide sales and service," said Jeff Multach, lead analyst with desktop systems engineering at Ameritech Services Inc. (No. 115) of Hoffman Estates, Ill. "You get something wrong with a network card and could die finding the right person to talk to."

Nevertheless, those who are shunning clones like their support status quo. Eva Sprintz, desktop support manager at Raynet Corp. in Menlo Park, Calif. (No. 94), said: "I don't want to take the risk. My support staff is stretched so thin, it's not worth our time. I tend to go for brand names."

The skinny on support

The three current clone vendors all have service and support plans in the works.

Power Computing offers toll-free lifetime phone support; additionally, customers can purchase a one-, two- or three-year contract that guarantees parts replacement and someone to do on-site repair or swap installation. The company has an arrangement with BSC, a division of BancTecInc., the outfit that services Dell computers, to handle service and support. Technicians are being trained through Apple's regular support training, and Power Computing is also offering to train customers' own on-site technicians.

"We're the only licensee that's designed a new motherboard," said Michael Rosenfelt, Power Computing director of marketing. "It has a baby AT form factor, one that many IS techs are familiar with. Apple's worked hand-in-hand with us."

David Methven, product manager at DayStar, said his company has always provided support through "extensive users' manuals, on-line support and phone tech support." DayStar's Genesis MP will be offered only through a certified and trained reseller channel. "We are also investigating the use of a nationwide on-site service provider for 24-hour service," Methven said.

Radius' one-year warranty gives customers access to the company's toll-free tech support. If more help is needed, customers are referred to a reseller who is an authorized Radius CPU provider, or if customers prefer on-site attention, Radius refers them to Technology Service Solutions, an on-site provider that will also be stocking parts.

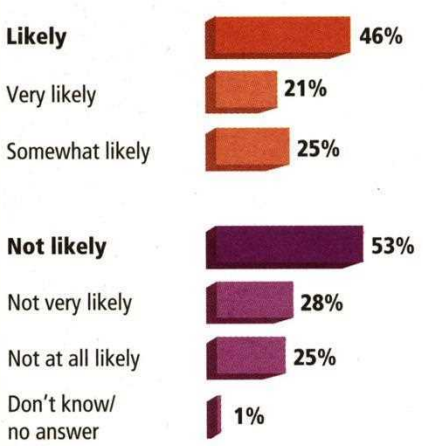
Price/performance

Part of the clone attraction includes getting more for your money. While some MacWEEK 200 sites immediately see the price advantage, others are not so sure.

"If we buy clones from Power Computing, we'll be getting more for our money, more computers, more memory, bigger hard drives," said Brian Lalor, systems analyst at the Stanford Linear Accelerator Center in Palo Alto, Calif. (No. 103). "We'll use the extra money to buy other equipment."

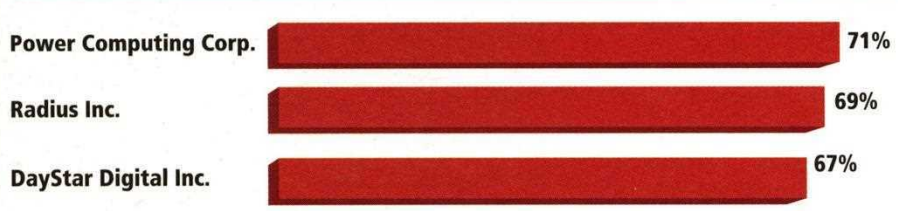
See Clones, Page 52

Likelihood that sites will buy Mac clones in the next 12 months



Base: All MacWEEK 200 sites.

Preferred manufacturers for Mac clone purchases



Base: Sites likely to purchase Mac clones.

	SITE	LOCATION	MACS	NON-MAC PCS	WORK-STATIONS
126	Blue Cross & Blue Shield of Minnesota	St. Paul, MN	755	1,100	2
127	Honeywell Inc. Military Avionics Div.*	Golden Valley, MN	743	790	84
128	Rockwell International Corp., Rocketdyne Division*	Canoga Park, CA	742	3,200	420
129	U.S. Department of Defense	Arlington, VA	717	7	17
130	City of Glendale	Glendale, CA	714	600	30
131	A.O. Smith Automotive Products Co.	Milwaukee, WI	702	200	150
132	Chevron USA Products Co.	Richmond, CA	701	300	1
133	Pep Boys — Manny Moe & Jack	Philadelphia, PA	700	1,000	250
134	British Columbia Auto. Association	Burnaby, BC	698	0	40
135	Alaska Air Group Inc.	Seattle, WA	697	660	3
136	Control Data Systems Inc.	St. Paul, MN	695	700	100
137	Dana Farber Cancer Institute	Boston, MA	688	2,200	100
138	Cadence Design Systems Inc.	San Jose, CA	688	50	1,600
139	Foote, Cone & Belding	Chicago, IL	684	210	0
140	New York Times Co.	New York, NY	682	1,500	112
141	McKinsey and Co.	New York, NY	681	150	10
142	Fox Broadcasting Co.	Los Angeles, CA	671	2,700	0
143	Bristol-Myers Squibb Co.	Newtown, PA	666	1,100	150
144	US West Communications Inc.*	Englewood, CO	665	63	20
145	NYNEX Corp.	White Plains, NY	662	1,200	30
146	Boeing Commercial Airplane Group	Wichita, KS	646	6,500	0
147	Chapman & Cutler	Chicago, IL	646	7	12
148	Beckman Instruments	Fullerton, CA	645	3,000	150
149	U.S. Department of Energy, Savannah River Site	Aiken, SC	644	200	0
150	Glaxo Inc.	Research Triangle Park, NC	642	3,500	100

**Companies with multiple sites.*

Introducing Windows 95.
It has a trash can you can open
and take things back out of again.

Imagine that.

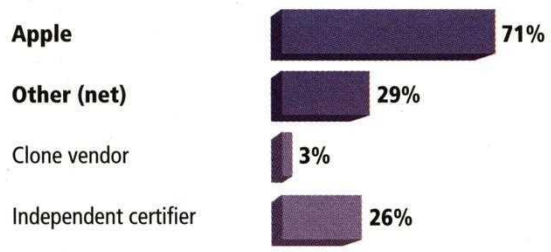
Clones

From Page 50

Of the three clone vendors, Power Computing has been offering the price competition up to this point. Radius and DayStar machines are still expensive since they are configured for niche markets, such as pre-press and digital video.

"Apple is finally getting price-competitive," said Frank Calabrese, manager of personal computing at Bose Corp. (No. 41) of Framingham, Mass. "They still appear to be tweaking the OS to meet the requirements of hardware, which gives them a home-field advantage regardless of what they say. I don't think a little bit cheaper or a little more memory will convince me to be an early adopter."

Preference for Mac clone certifiers



Base: Sites likely to purchase Mac clones.

Certification please

Seventy-one percent of MacWEEK 200 respondents said Apple should certify that a Mac clone is 100 percent compatible.

Apple spokeswoman Laurence Clavère said there is such a certification process. It is "not aimed at checking the quality of the hardware per se. It's aimed at making sure it is really Mac OS-compatible, that all the benefits of the platform are leveraged," she said.

Apple conducts a two-week testing process, which involves a sample of 15 computers from the first batch of production units from each vendor. Apple operates the machines under normal business conditions, testing a series of applications. What the testers look for is a functionality level customers would expect from the Mac OS. The certification, signified by the Mac OS logo, "comes at the end of a cooperative process between the vendor/licensee and the Apple engineers," Clavère said.

For some this is reassuring news. For others, such as Bose's Calabrese, brand name still counts. "On the Intel side of our house, we've standardized on Hewlett-Packard Co.," he said. "We pay a price premium and we're not getting anything slick; what we're counting on is reliability. They'll be here a year from now. It's scary to think that maybe Apple won't be, so I should go with a clone manufacturer? Now, a [Mac] clone under an IBM logo, that's a different thing."

Will the market grow?

Given that many Mac managers must justify their Mac purchases against PC purchases, a healthy Mac market is something they'd like to point out to upper management.

"Clones might decrease Apple's profit margins," Stanford's Lalor said. "I know when some people I work with see negative things about Apple in the press, they get nervous; they don't want to get orphaned. I think it'll work out to everyone's advantage to expand the base."

With the MacWEEK 200 results showing a 17 percent increase in Macs in the coming year, that expansion just may happen. Will it be enough? Charles Reeves, computing specialist at Lockheed-Martin Energy Systems Inc. in Oak Ridge, Tenn. (19), said, "I'm a Mac bigot, so I hope the platform expands ... and that it's not too little, too late." □

Copland compatibility challenge

Mac clone buyers have so far been spared the compatibility problems that plagued users of the first IBM PC knock-offs a dozen years ago, but the real test in this arena is yet to come.

Early adopters and reviewers of the first Mac clones have generally reported 100 percent compatibility with the Mac OS, Mac applications, and cards and peripherals. That's because first-generation Mac clones are, from a technical point of view, identical to Apple's machines; virtually all the critical electronics on their logic boards are licensed from Apple.

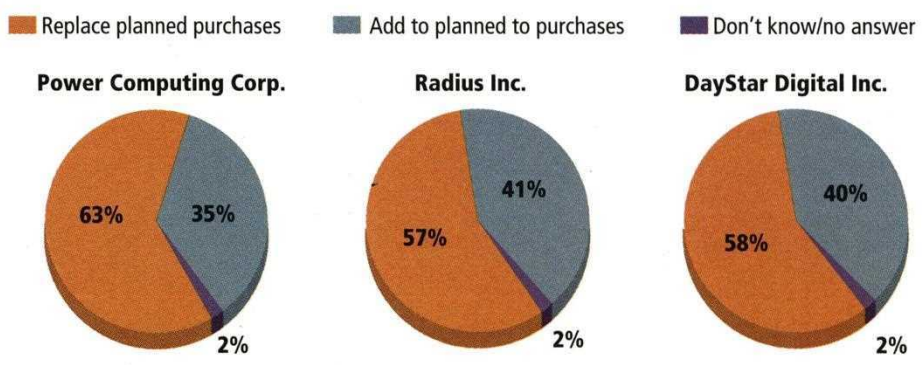
Neither Apple nor the clone makers have much choice in the matter: Because the Mac OS is tightly coupled to Apple-developed application-specific integrated circuits, it would be difficult, expensive and time-consuming to build systems capable of running the OS and applications written for it without the Apple chips.

As long as they depend on Apple circuitry, however, clone makers will have only limited capability to improve performance, build in new features and reduce prices. For that reason Apple has agreed to eliminate dependencies on proprietary hardware as part of the Copland OS, due next year. The Common Hardware Reference Platform, the specification under which IBM Corp., Motorola Inc. and others will build PowerPC systems capable of running the Mac OS and several others, implies such hardware abstraction.

Within two years, clone makers are likely to be offering Mac-compatible hardware to which Apple's only contribution is the OS and possibly ROM chips. Preserving compatibility will be a greater challenge.

Fortunately, according to sources at both Apple and several licensees, there is reason to hope clone makers will be able to meet the challenge even as they move to more innovative designs. Apple is providing strong guidelines for hardware just as it has done for software. In addition, the PCI bus standard and Open Firmware provide effective mechanisms for integrating hardware. — By Henry Norr

The effect of Mac clone purchases on Apple Mac planned purchases

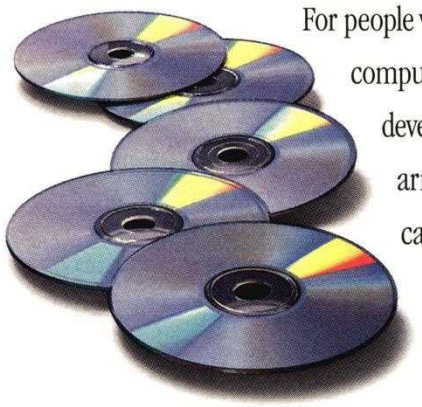


Base: Sites likely to purchase clones from a specific manufacturer.

	SITE	LOCATION	MACS	NON-MAC PCS	WORK-STATIONS
151	Prudential Insurance Co., Western Operations	Woodland Hills, CA	641	125	37
152	BP Exploration Inc.*	Houston, TX	638	75	170
153	Wyeth-Ayerst Research	Pearl River, NY	629	497	18
154	Credit Lyonnais Securities USA Inc.	New York, NY	623	150	160
155	Sony Electronic Publishing	Monterey, CA	620	200	50
156	General Electric Co.	Bluebell, PA	615	20	25
157	City of Philadelphia	Philadelphia, PA	612	3,000	0
158	Avis Rent-A-Car System Inc.*	Garden City, NY	612	580	10
159	Arthur D. Little Inc.	Cambridge, MA	610	600	5
160	National Ocean Service	Silver Spring, MD	605	600	300
161	Ernst & Young*	Boston, MA	602	75	0
162	Fasken, Campbell & Godfrey	Toronto, ON	602	5	0
163	Hughes Aircraft Co.*	Malibu, CA	600	100	100
164	Digital Equipment Corp.*	Marlborough, MA	595	2,000	1,200
165	Metropolitan Water Reclamation District of Greater Chicago	Chicago, IL	592	450	1
166	Superconducting Super Collider Laboratory	Dallas, TX	592	100	50
167	DDB Needham Worldwide Inc.*	Chicago, IL	587	12	1
168	Naval Surface Warfare Center*	Bethesda, MD	585	600	100
169	Environmental Systems Research Institute	Redlands, CA	584	517	415
170	Loma Linda Hospital & University	Loma Linda, CA	582	500	20
171	Taylor Corp.	No. Mankato, MN	579	675	4
172	Honeywell Inc.*	Phoenix, AZ	555	1,500	300
173	Bronner Slosberg Humphrey Inc.	Boston, MA	553	40	0
174	County of Los Angeles Assessor	Los Angeles, CA	552	1,300	40
175	Digital Equipment Corp.*	Maynard, MA	550	2,000	700
176	Nortel Communications, Division of Northern Telecom Inc.*	MacLean, VA	533	18	5
177	US West Marketing Resources Group Inc.*	Portland, OR	532	30	18
178	Baxter Healthcare Corp.	Round Lake, IN	530	1,000	50
179	Holiday Inn Worldwide	Salt Lake City, UT	530	150	3
180	McDermott International Inc.	Amelia, LA	528	400	48
181	US Sprint Communications Co. LP	Atlanta, GA	526	1,100	25
182	GTE Laboratories Inc.	Waltham, MA	525	100	150
183	Rockwell International*	Anaheim, CA	508	2,000	400
184	ARCO Exploration and Production Technology*	Plano, TX	500	500	250
185	Tracor Inc.	Austin, TX	500	2,500	500
186	Turner Broadcasting Systems Inc. (World Info Tech Service)	Atlanta, GA	500	500	10
187	Grey Advertising Inc.	New York, NY	495	500	5
188	Health Net (Health Network USA Inc.)	Woodland Hills, CA	494	1,500	6
189	King County, Dept. of Metro Services	Seattle, WA	493	1,230	10
190	DDB Needham Worldwide Inc.*	New York, NY	489	20	1
191	Southern California Edison Co.	Long Beach, CA	485	25	10
192	Airtouch Cellular Communications Inc.	Atlanta, GA	482	40	30
193	Booz, Allen & Hamilton Inc.*	New York, NY	473	5	0
194	American Academy of Computer Training	Rolling Meadows, IL	471	425	24
195	BC Hydro	Burnaby, BC	470	2,000	4
196	McCaw Cellular Communications Inc.	Kirkland, WA	469	75	32
197	DDB Needham*	Dallas, TX	466	12	1
198	Nichols Research Corp.	Huntsville, AL	463	195	42
199	Hughes Aircraft Co.*	Landover, MD	460	300	175
200	Fermi National Accelerator Laboratory	Batavia, IL	453	300	1,000

**Companies with multiple sites.*

Imagine this.



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In a recent independent study, for example, the RISC-based Power Macintosh™ 9500 outperformed a 120 MHz Pentium-processor-based PC running Windows by 63% on average. When running scientific and technical applications, the Power Macintosh advantage climbed to 80%. While for power-hungry graphics applications, the Power Mac™ was more than twice as fast.*

Why does the average person need this kind of power on his or her desktop? Because — as both Microsoft and Intel are quick to point out — graphics, multimedia and interactive media will play a huge role in the future of personal computing. What they *don't* point out, of course, is that Power Macintosh delivers the power you need for these advanced, processing-intensive applications, today.

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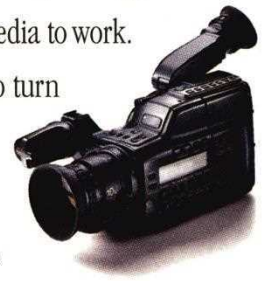
Of course, all the raw power in the world is worthless if you can't use it. That's why every Macintosh is so easy to set up and use. That's why every new Mac™ includes an innovative help system that doesn't just answer your questions, but shows you what to do, where to click and what to type to get things done. And why we make it so easy to create Internet connections, install multimedia software and set up entire new networks from scratch.

The way beyond multimedia.

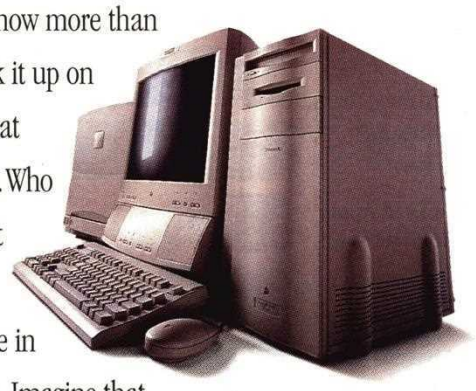
For many of the companies that design and manufacture PCs (or write operating systems for them), the biggest challenge of all is simply getting multimedia to work.



Meanwhile, ordinary people who turn on a Power Mac can do a lot more than run snappy new multimedia titles. They can create 3-D graphics, use voice recognition, videoconference across continents, even get started with virtual reality — all at the touch of a few keys and a click of a mouse. Because you can get these so-called "future" technologies in a Power Macintosh, today.**

A new choice.

The next time you hear the skeptics say, "But a Macintosh won't run the software we need," tell them this: There's now a Macintosh — the Power Macintosh 6100/66 DOS Compatible, to be specific — that runs everything a Macintosh can run, *plus* thousands of programs for Windows and DOS. Then, if they ask you about hardware compatibility, tell them how the PCI slots built into the new Power Mac accept standard PCI cards.



If they want to know more than that, tell them to look it up on the World Wide Web, at http://www.apple.com. Who knows, they just might get a peek at what Windows will look like in another decade or so. Imagine that.

*Big surprise, huh? For more ammunition to use against Windows fanatics, surf on over to http://www.apple.com to see the results of independent testing by Competitive Assessment Services, 1995. **Some of these capabilities may require the purchase of additional software or hardware. © 1995 Apple Computer, Inc. All rights reserved. Apple, the Apple logo and Macintosh are registered trademarks of Apple Computer, Inc. Mac, Power Mac and Power Macintosh are trademarks of Apple Computer, Inc. All Macintosh computers are designed to be accessible to individuals with disability.

Education 50 sites like Power Macs, plan to buy clones

Power Macs more plentiful among the Education 50 than the MacWEEK 200.

This year MacWEEK's fifth annual Education 50 found Power Macs among Education 50 sites about as often as among MacWEEK 200 sites (90 percent). It is the volume of these machines, however, that is much greater at education sites. On average, 623 Power Macs are installed per site, compared to 156 at MacWEEK 200 commercial/government sites. Of the other Mac models installed at education sites, only Quadras and Mac II models are found in higher concentrations than Power Macs.

Unlike MacWEEK 200 sites (see story, Page 42), the majority of education sites have Performas and Centrises installed and more than one and a half times the number of them than commercial/government sites.

Macs make up 37 percent of the computers at education sites, about the same as the MacWEEK 200. You're more likely to find a workstation at an Education 50 site (98 percent have a workstation vs. 93 percent for the MacWEEK 200), but the overall volume of workstations is not as great (6 percent of Education 50 computers are workstations vs. 12 percent for the MacWEEK 200).

Purchase plans

Education sites plan to buy more computers, especially Macintoshes, at a higher rate than commercial/government sites. Nearly all education sites have Macintosh purchase plans (96 percent vs. 89 percent for commercial/government); purchase plans for Intel-based PCs are also higher but by a small margin (90 percent of education sites vs. 87 percent of commercial/government sites). In fact, Mac purchasing is so intense at education sites that the volume of Macs planned for purchase (33,674) is close to that for PCs (36,738).

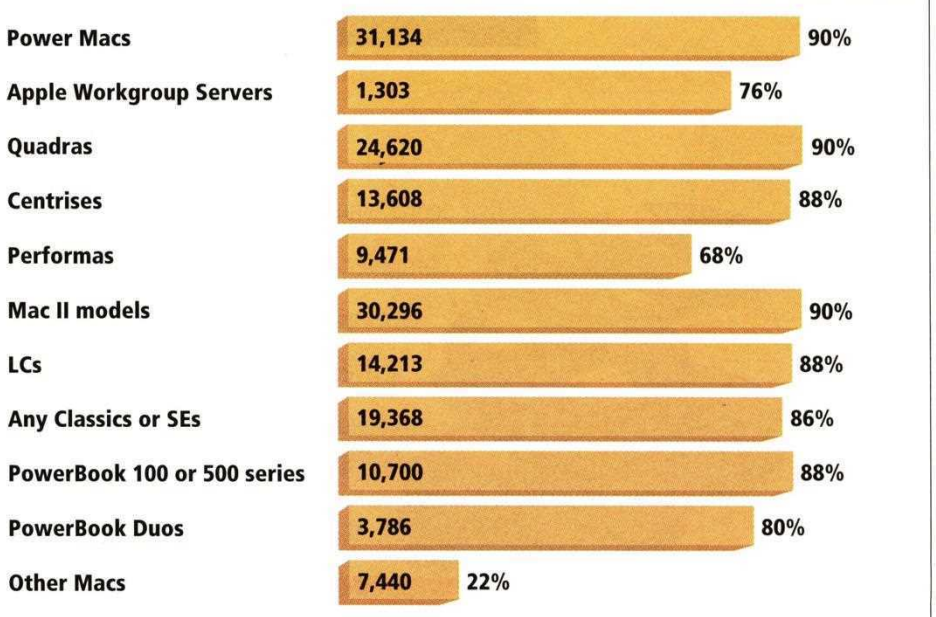
Power Macs win the campus popularity contest: 88 percent of education sites combined plan to buy more than 22,000 Power Macs. Quadras, Performas and LCs remain favorites, with more than 44 percent of sites planning to buy LCs. Mac mobile computing is also more popular among education sites: 84 percent plan to buy either PowerBooks or Duos, with most planning on PowerBooks.

Clones

Education sites are more open to considering buying Mac clones than are commercial/government sites: nearly two-thirds are very or somewhat likely to purchase one in the next year. Further, when asked which manufacturer they would consider buying from, respondents answered DayStar Digital Inc. (84 percent), Power Computing Corp. (75 percent) and Radius Inc. (72 percent).

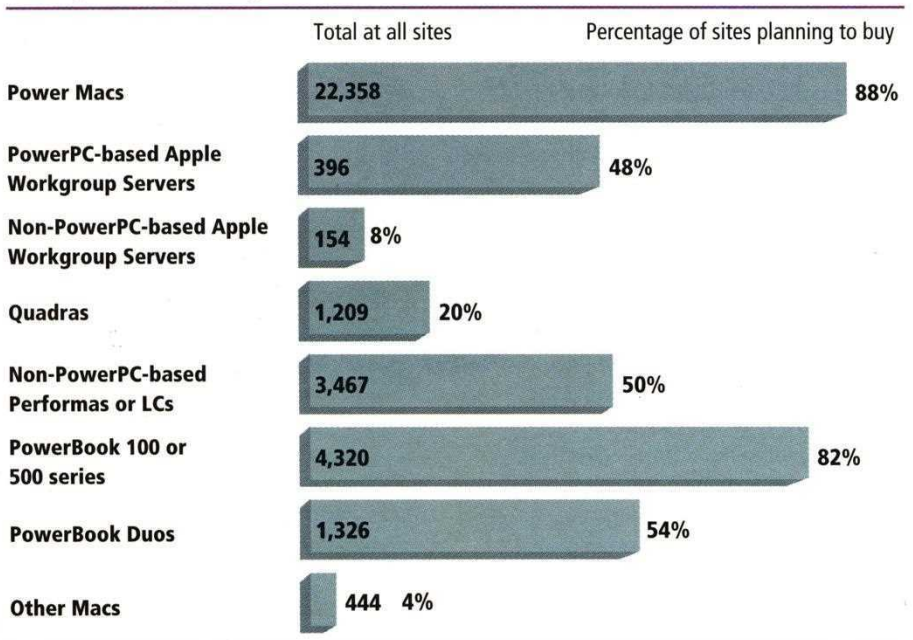
Regardless of the manufacturer, education sites are about half as likely as business sites to consider purchasing Mac clones in addition to Apple Macs. Universities would rather buy clones as replacements. □

Sites with various Mac models installed


Total at all sites
Percentage of sites that have installed
Power Macs 31,134 90%
Apple Workgroup Servers 1,303 76%
Quadras 24,620 90%
Centrises 13,608 88%
Performas 9,471 68%
Mac II models 30,296 90%
LCs 14,213 88%
Any Classics or SEs 19,368 86%
PowerBook 100 or 500 series 10,700 88%
PowerBook Duos 3,786 80%
Other Macs 7,440 22%

Base: All Education 50 sites.

Sites planning to buy various Mac models in the next 12 months


Total at all sites
Percentage of sites planning to buy
Power Macs 22,358 88%
PowerPC-based Apple Workgroup Servers 396 48%
Non-PowerPC-based Apple Workgroup Servers 154 8%
Quadras 1,209 20%
Non-PowerPC-based Performas or LCs 3,467 50%
PowerBook 100 or 500 series 4,320 82%
PowerBook Duos 1,326 54%
Other Macs 444 4%

Base: All Education 50 sites.

DOS on Macs popular; portable buys also rise

By Mitzi Waltz

Apple's Power Macs are a hit at top university sites. Almost all are rapidly moving to a RISC-based Mac standard, with 88 percent planning more Power Mac purchases this year. Portable solutions are increasing in popularity as well at the University of Michigan, which tops this year's Education 50 list with 12,800 Macs in service.

"As they become more functional, less expensive, and, most importantly, easier to read, [faculty and staff] are looking to purchase both PowerBooks and Duos," said Andy Palms, manager of network products and computing sites at the University of Michigan.

The Power Mac advantage

The PowerPC-based Apple Workgroup Servers are also making a strong showing, with 48 percent of education sites intending to add them this year. All acknowledged that the Power Mac's biggest advantage is, naturally, power. To harness it, emerging specifications recommend almost twice as much RAM as CISC Mac specs called for, according to several university computing site managers.

At 35 of the Education 50 sites, Intel-standard PCs outnumber Macs, so it's not surprising that interest at some schools is high in DOS/Windows compatibility. This gives the Power Macs an extra edge and may account for some of the early adoption. DOS compatibility, largely through the use of boards, can also bring about instructional flexibility, as discovered at the University of North Carolina at Chapel Hill, this year's No. 2 site with 8,000 Macs (see story, Page 59).

One computer science classroom has just installed 35 Power Mac 6100s with DOS boards, said Linwood Futrelle, help desk manager at UNC's Office of Information Technology. "Now the faculty can teach anything they want, from programming to specific software," he said. "They can mix applications, and it's just a hot key to switch between them."

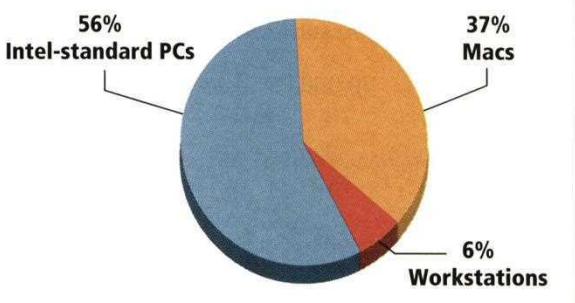
Other lab managers liked the concept but found that, in practice, the split-personality Power Macs are hard to network.

"You can't have the DOS side and the Mac side both talking TCP/IP at the same time," said Bob Penka, associate director of computing and communications services at the University of Illinois, Urbana-Champaign Campus, No. 3 with 7,730 Macs.

"Until the boards are really cheap and the process of switching is much more seamless, we aren't ready to bite," said James Pepin of the No. 4 school, the University of Southern

See Education, Page 56

Microcomputer and workstation breakdown



Base: All computers installed at Education 50 sites.

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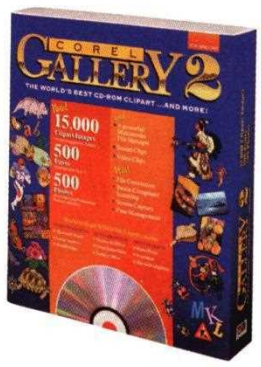

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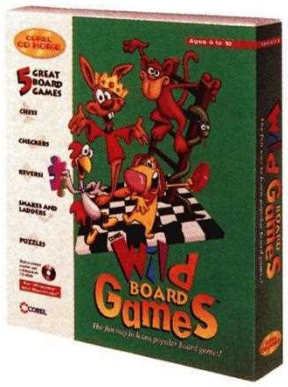

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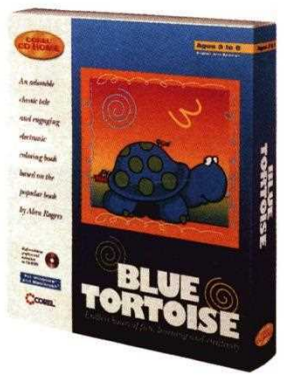

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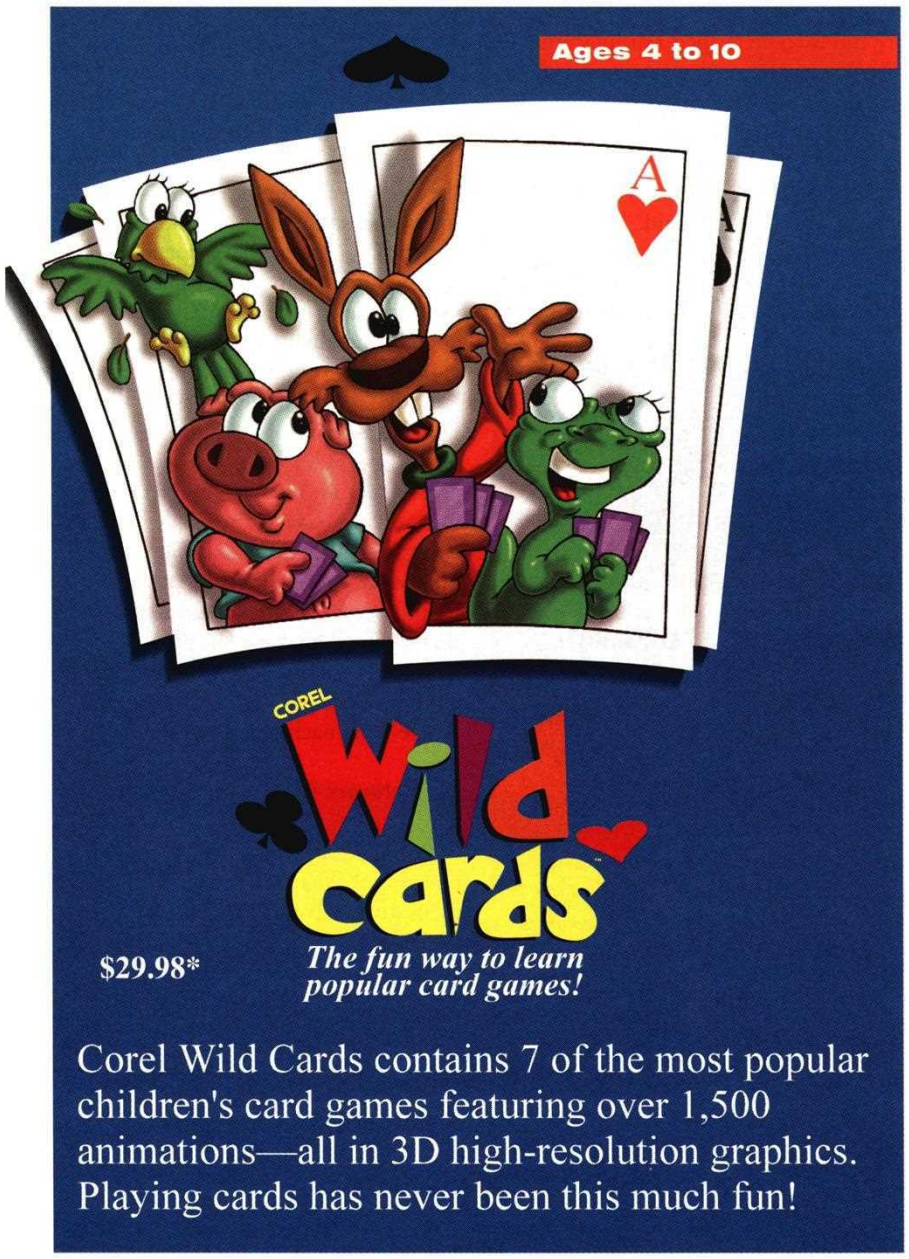

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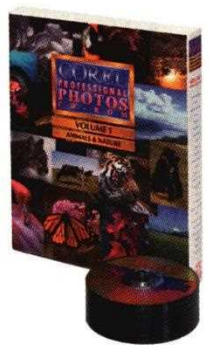

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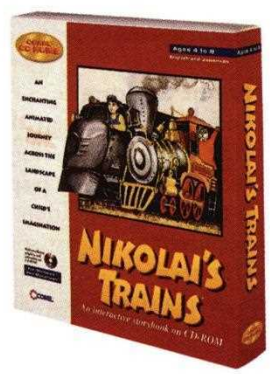

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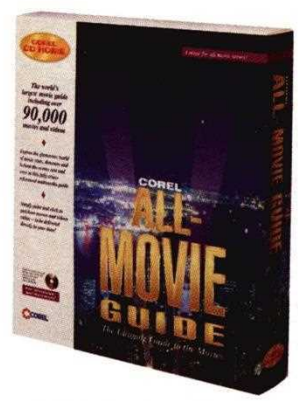

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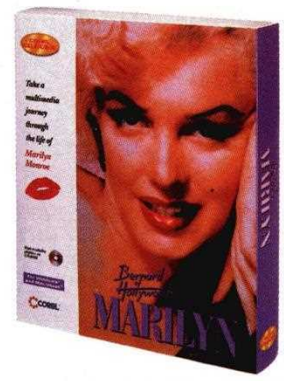

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Education

From Page 54

California in Los Angeles, which fields just over 7,000 Macintoshes. "The boards we've seen don't share the Ethernet interface well, and that's a giant downside for us."

To clone or not to clone?

Education sites are more likely than business sites to be sporting Mac clones in the next year, according to survey respondents. About two-thirds of education sites are planning to purchase at least some clone machines. Interest in Power Computing Corp.'s less-expensive replacements or supplements to the current base of low-end Macs is relatively high, with half of those planning clone purchases looking at one or both options. Higher-end machines from DayStar Digital Inc. and Radius Inc. were more likely to be tapped as replacements.

That's not to say that clones are being snapped up right away. At some sites the issue may be the way purchasing is set up. "In our state system we have state contractors, and Apple's on a 'convenience contract,' " UNC's Futrelle said. "You can buy any [Apple] Mac configuration you need, but clones are a different matter. You'd have to have a letter of justification, you'd have to put it out on bid, and that's two extra hoops to jump through."

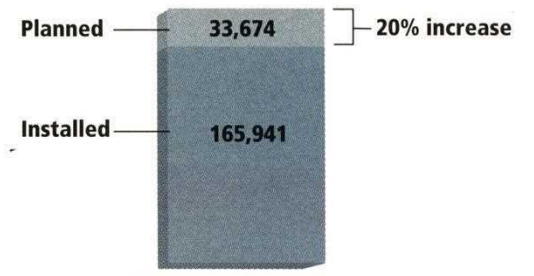
Futrelle noted that this is not the case on the PC side, however, so perhaps there's hope the Mac procedure could change. "There we get everything from 'Made in Joe-Bob's Garage' to the major vendors," he said.

Most schools, however, have delayed purchasing or even formally evaluating clones because either they are wary about particular manufacturers' clone configurations or they have questions about clone quality in general. "The Radius clones tend to be real expensive, and they look like they're designed especially for advertising agencies," said Kip Kelso, manager of the computer store at Carnegie-Mellon University in Pittsburgh (No. 15). "The other clones haven't been available [long enough to evaluate]. I do believe that they'll play some role further down the road, although some folks have expressed a concern that some of the clone IBM machines are of low quality. They seem to think it may be worthwhile to pay a little premium to get the Apple-logo machines."

Web clients drive purchases

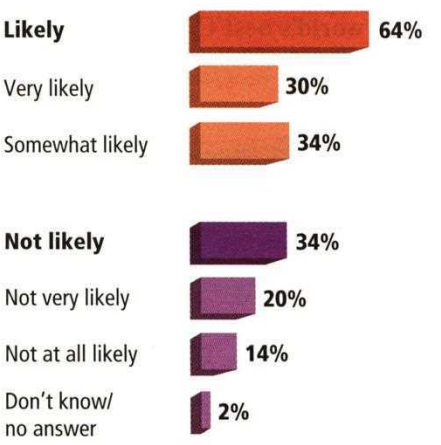
Top education sites reported few departures from Apple hardware's previous role on campus. Macs are concentrated primarily in student computing labs; graphic arts, design and journalism departments; science labs; and some university offices. Several respondents noted that the trend toward using PCs in their universities' business schools was accelerating rather than slowing down. This means that most Mac purchases will be replacements for existing machines or part of expansion within key use areas, with one exception: a strong and growing presence in on-line publishing, particularly via the World-Wide Web.

Growth effect of 12-month purchase plans on installed base



Base: Total number of Macs installed or planned for purchase.

Likelihood that sites will buy Mac clones in the next 12 months



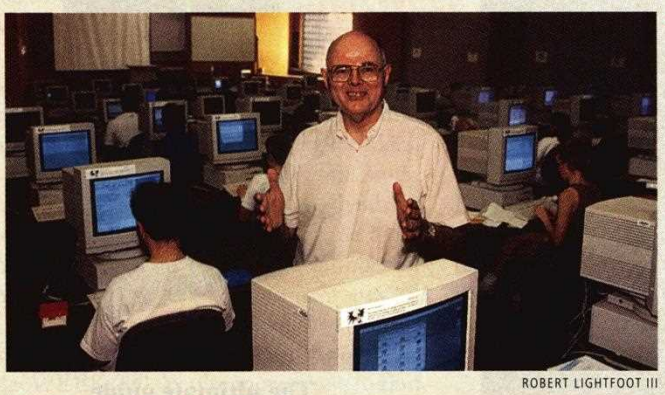
Base: All Education 50 sites.

"The Web has been the 'killer app' that is increasing interest in computing [on campus] in general," said University of Michigan's Palms. Several university representatives said that Macs are wildly popular as dedicated or occasional Web client machines, with a few putting them to work as dedicated Web servers.

Netscape Navigator from Netscape

See Education, Page 59

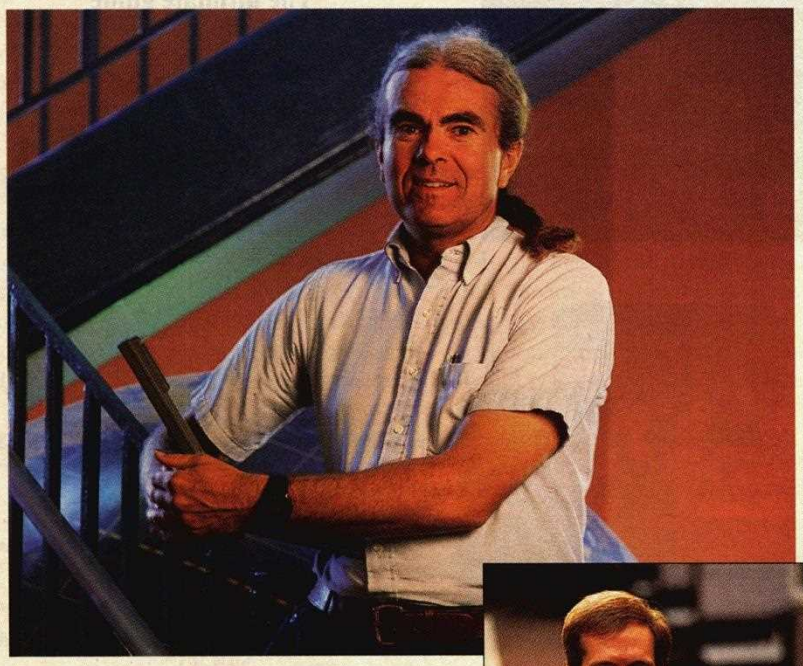
CLASS of '95



ROBERT LIGHTFOOT III

"DOS and Mac can't talk TCP/IP at the same time."

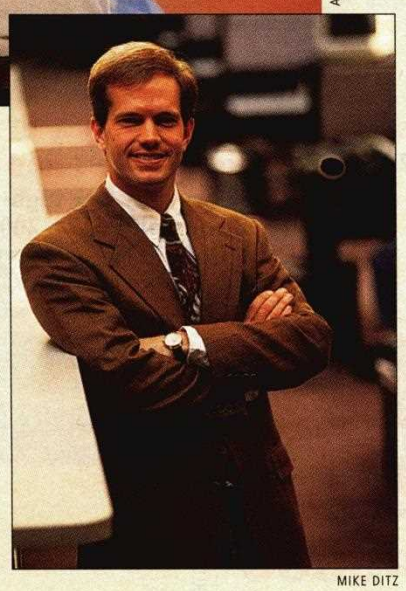
— Bob Penka, associate director of computing and communications services, University of Illinois at Urbana-Champaign



ALAN LEVINSON

"Copland? I'm looking forward to Gershwin, to true pre-emptive multitasking."

— James Pepin, executive director of university computing services, University of Southern California



MIKE DITZ

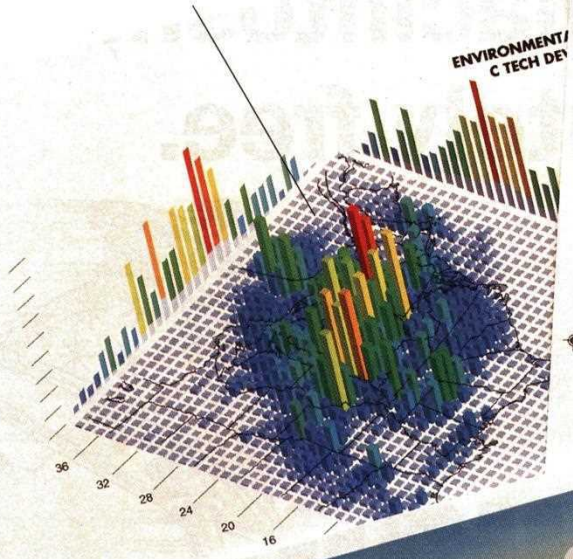
"The Web has been the 'killer app.' "

— Andy Palms, manager of network products and computing sites, University of Michigan

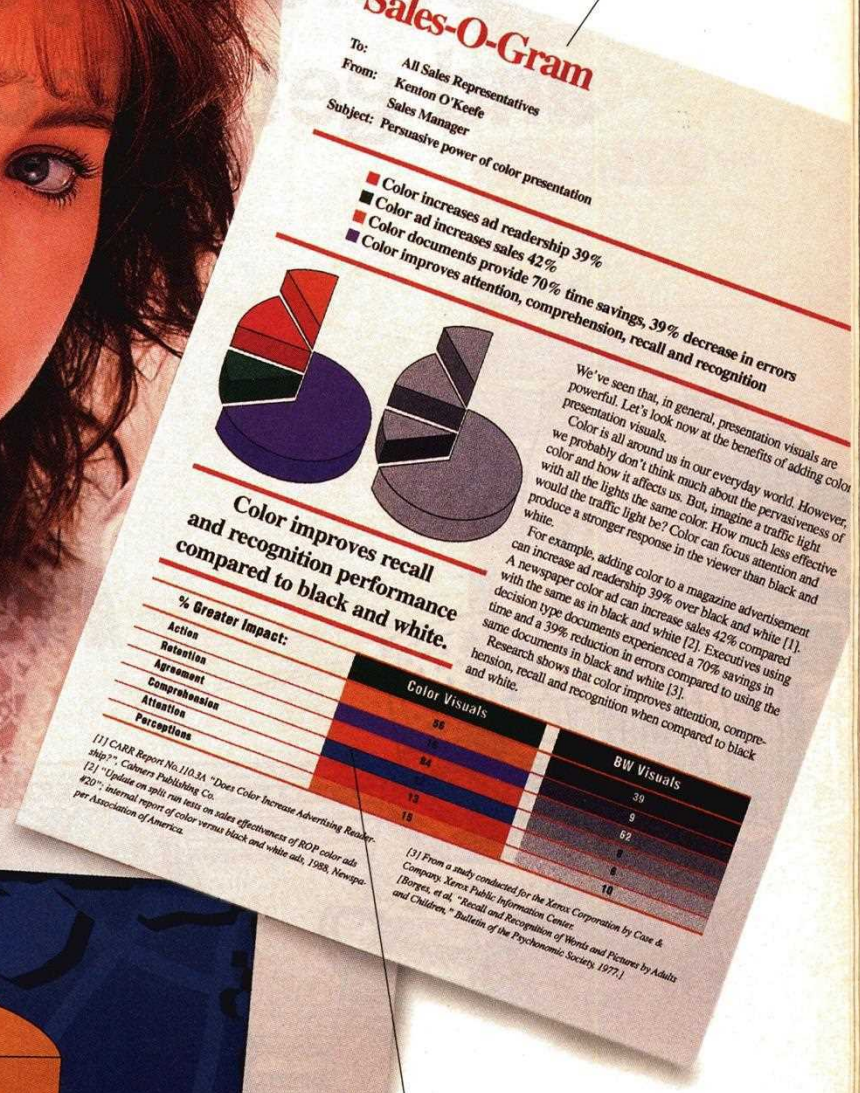
	INSTITUTION	LOCATION	MACS	NON-MAC PCS	WORK-STATIONS
1	University of Michigan	Ann Arbor, MI	12,800	12,000	2,000
2	University of North Carolina at Chapel Hill	Chapel Hill, NC	8,000	12,000	300
3	University of Illinois, Urbana-Champaign Campus	Urbana, IL	7,730	7,000	2,000
4	University of Southern California	Los Angeles, CA	7,005	7,000	1,500
5	University of Wisconsin — Madison	Madison, WI	6,134	18,733	267
6	University of Chicago	Chicago, IL	6,000	1,650	1,650
7	University of Rochester	Rochester, NY	5,875	4,000	400
8	University of Minnesota	Minneapolis, MN	5,650	8,000	1,000
9	Columbia University	New York, NY	5,500	8,000	1,250
10	University of California at Berkeley	Berkeley, CA	5,125	7,500	1,000
11	University of Maryland	College Park, MD	4,930	10,000	0
12	University of Utah, Computer Center	Salt Lake City, UT	4,430	5,000	1,000
13	Princeton University	Princeton, NJ	4,150	3,500	2,000
14	Duke University	Durham, NC	3,765	12,000	1,500
15	Carnegie-Mellon University	Pittsburgh, PA	3,560	500	500
16	University of Alberta	Edmonton, AB	3,519	9,243	830
17	Dartmouth College	Hanover, NH	3,412	300	150
18	Auburn University	Auburn, AL	3,202	5,000	475
19	University of Arizona	Tucson, AZ	3,200	14,000	1,200
20	Boston College	Chestnut Hill, MA	3,079	590	100
21	University of Kentucky	Lexington, KY	2,972	7,000	250
22	University of South Carolina	Columbia, SC	2,810	6,500	500
23	Drexel University	Philadelphia, PA	2,798	150	50
24	University of Colorado	Boulder, CO	2,662	4,360	520
25	Indiana University	Bloomington, IN	2,580	7,497	487

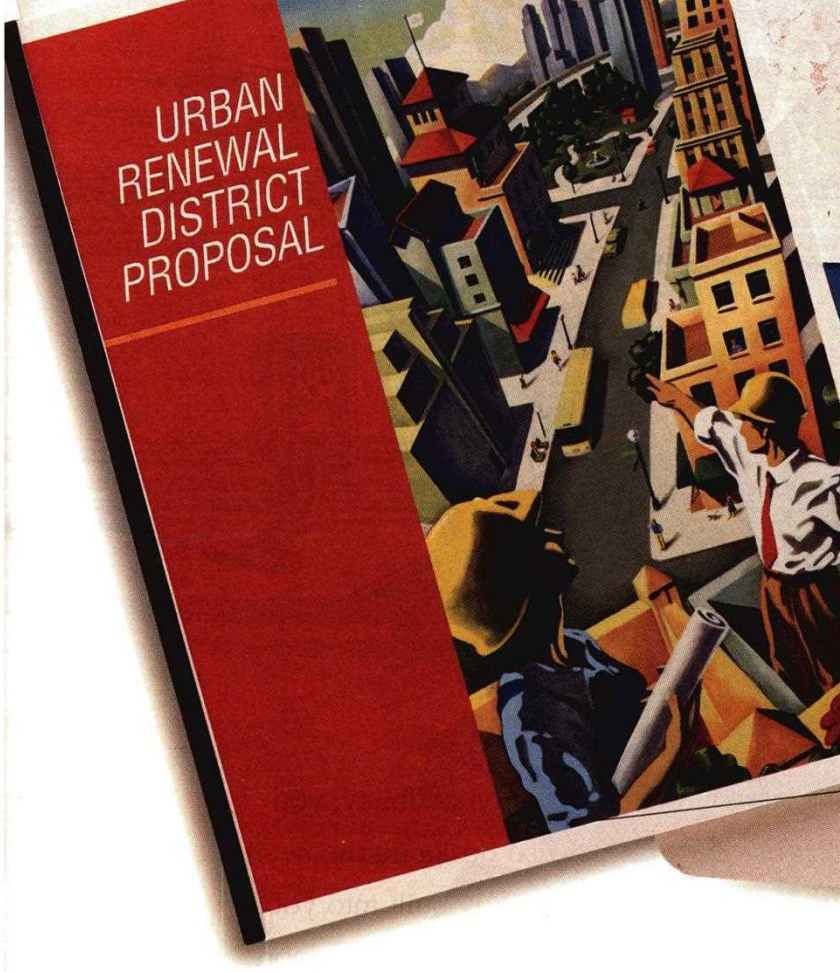
Color blends look airbrushed, printed on the only desktop color laser with continuous tone. Legal-size. Gorgeous!

Incredibly precise color accuracy. Full-page or tabloid-bleed. True to the numbers!



Info-rich report graphics on plain or glossy paper. Up to 4 pages per minute! The fastest color yet.


Sales-O-Gram
To: All Sales Representatives
From: Kenton O'Keefe
Sales Manager
Subject: Persuasive power of color presentation
Color increases ad readership 39%
Color ad increases sales 42%
Color documents provide 70% time savings, 39% decrease in errors
Color improves attention, comprehension, recall and recognition
We've seen that, in general, presentation visuals are powerful. Let's look now at the benefits of adding color presentation visuals.
Color is all around us in our everyday world. However, we probably don't think much about the pervasiveness of color and how it affects us. But, imagine a traffic light with all the lights the same color. How much less effective would the traffic light be? Color can focus attention and produce a stronger response in the viewer than black and white.
For example, adding color to a magazine advertisement can increase ad readership 39% over black and white [1]. A newspaper color ad can increase sales 42% compared with the same as in black and white [2]. Executives using decision type documents experienced a 70% savings in time and a 39% reduction in errors compared to using the same documents in black and white [3].
Research shows that color improves attention, comprehension, recall and recognition when compared to black and white.
Color improves recall and recognition performance compared to black and white.
% Greater Impact:
Action
Retention
Agreement
Comprehension
Attention
Perception
Color Visuals
56
78
84
13
16
BW Visuals
39
9
62
8
8
10
[1] CARR Report No. 110.3A. "Does Color Increase Advertising Readership?", Cahners Publishing Co.
[2] "Update on split run tests on sales effectiveness of ROP color ads #20", internal report of color versus black and white ads, 1985, Newspaper Association of America.
[3] From a study conducted for the Xerox Corporation by Case & Company. Xerox Public Information Center.
[Borges, et al. "Recall and Recognition of Words and Pictures by Adults and Children," Bulletin of the Psychonomic Society, 1977.]



High impact, business-building overheads and reports. Up to 600 x 300 dpi. Desktop option switches paper and transparencies. A bigger piece of the pie will be coming your way!

Vibrant covers, color prints and comps. Full-bleed tabloid. Front and back. Any paper, vellum to cover. What will you propose next?

Color is color, until you compare the best.

These are the color printers of Tektronix, the best in the world.
For all the colorful things you do in business, graphic arts, science and engineering, there's a Phaser Color Printer that fits your requirements perfectly. Among these award-winning printers are the Phasers designated Editors' Choice by *PC Magazine*. "All five offerings from the [Tektronix] Phaser line define the state of the art in their respective categories."* Now four new Phasers raise those standards even higher.

All Phaser Color Printers offer:
■ 300 dpi or 600 dpi ■ AdobePostScript™ Level 2 ■ Paper prints or transparencies ■ Support for PCs, Macs, workstations and networks ■ Pantone's color certification ■ RISC-speed print processing ■ TekColor™ image enhancement ■ A Tektronix one year warranty ■ Top technical support.
Visit *MacWorld* Booth #5024 to see the best color printers for *your* world.

Phaser 140

NEW Phaser 240

NEW Phaser 340

NEW Phaser 540 Plus

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Tektronix

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http://www.tek.com/CPad?1221

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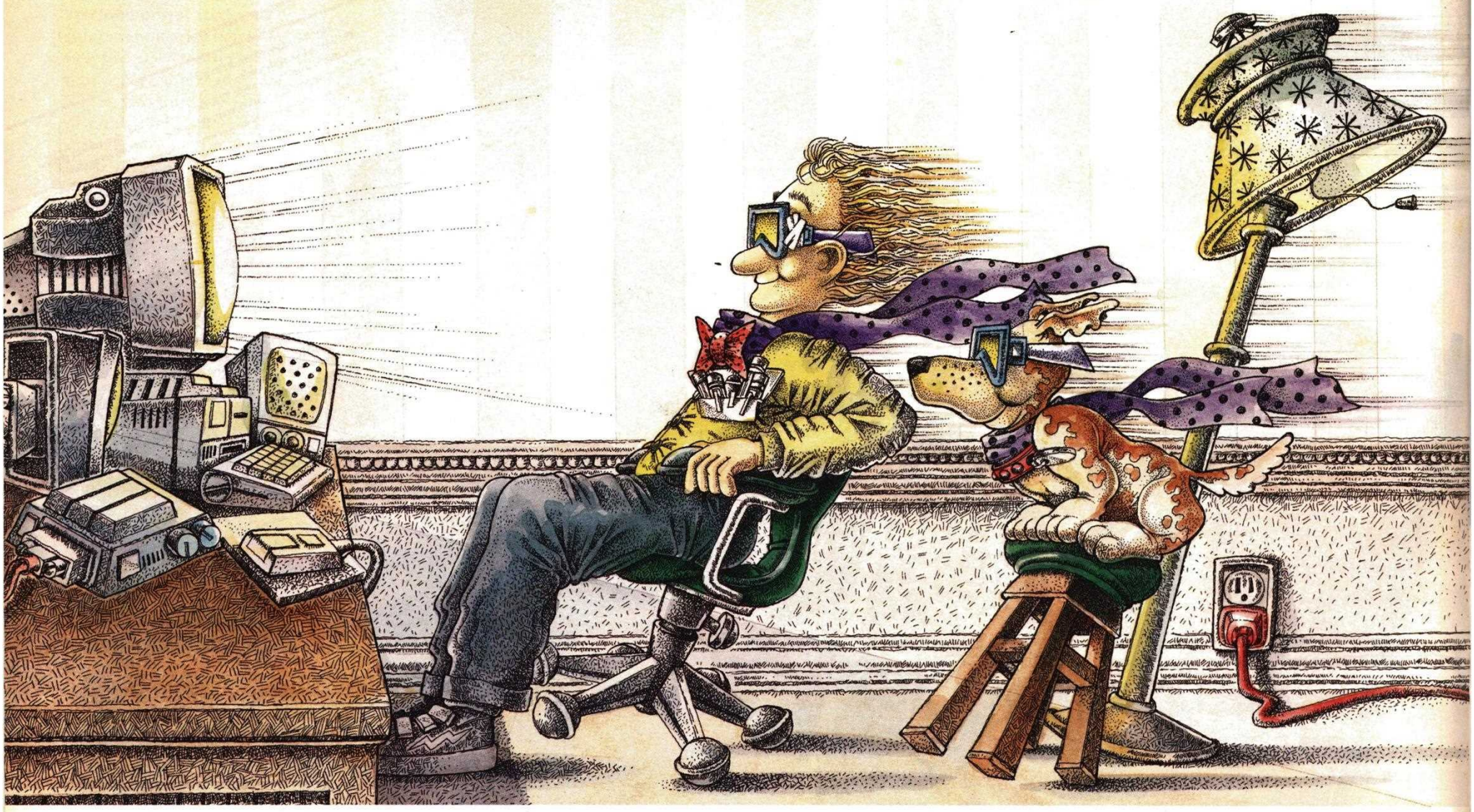
*PC Magazine, Nov. 22, 1994, Annual Printer Review.

Buy one of our *Fast*!SCSI PCI adapters for your Power Macintosh, and get a facelift absolutely free.



The new PCI-based Power Macintosh™ systems are pretty zippy. But if you're running applications like desktop video and high-end imaging, they may not be zippy enough. Because they may not have enough throughput.

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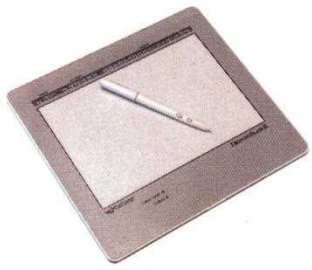

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DrawingSlate II combines the advantages of a mouse and a graphics tablet in a sleek, lightweight package. The cordless, pressure-sensitive pen and the texture of the tablet's surface bring users closer than ever to the feel of traditional media.
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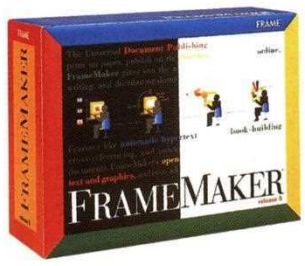

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FrameMaker 5

Produce professional documents easily with FrameMaker 5. Compatible with Macintosh, Windows or UNIX systems, its on-line word processing, graphics, design, layout and distribution capabilities enhance productivity, enabling users to integrate data from multiple applications.
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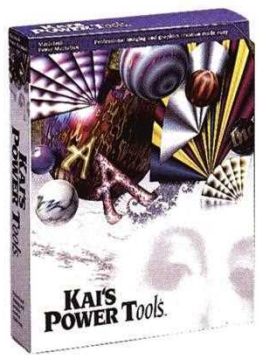

HSC Software
Kai's Power Tools 2.1

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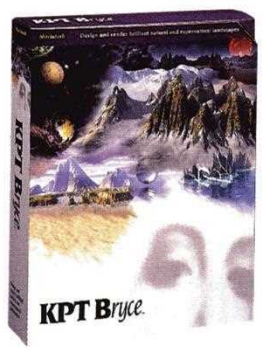

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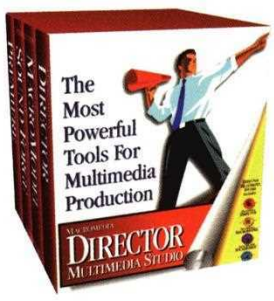

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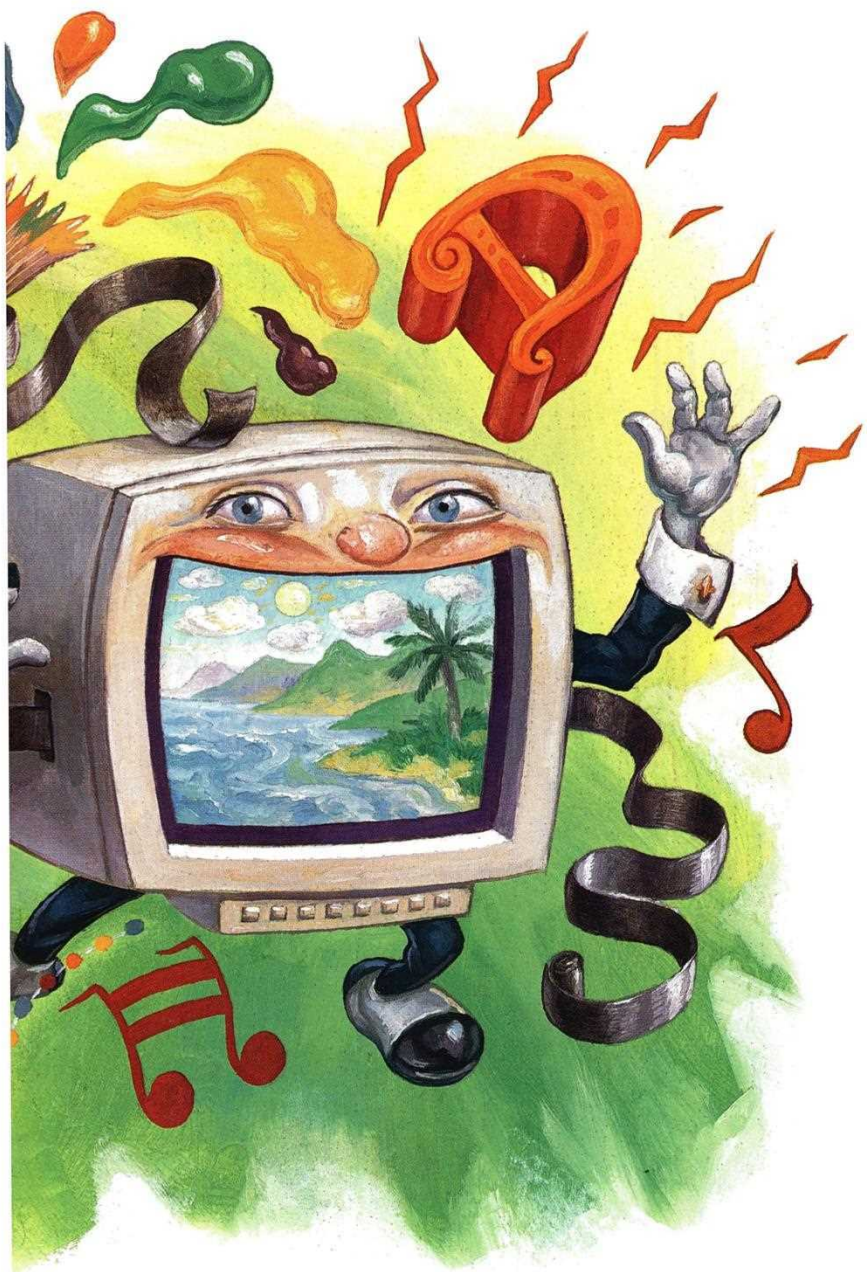
Multimedia



Radius
VideoVision Studio 2.0

VideoVision Studio 2.0, now accelerated for Power Macintosh, is designed to generate high-quality digital video. It features professional machine/deck control, improved video and audio synchronization and enhanced editing features.
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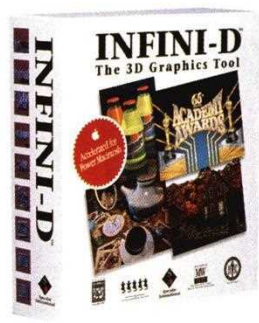
Specular International
Infini-D 3.0



Infini-D is a 3-D modeling, rendering and animation tool that combines broadcast-quality output with an easy-to-use interface. It can be integrated with other graphics products to create the ultimate production suite.
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The ViewSonic 21PS features super-contrast screen technology which increases color contrast and saturation, fine .25-mm dot pitch and a unique On-View control system to adjust and customize images.
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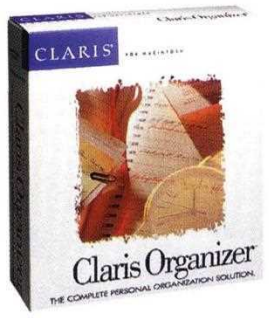
Business P



CLARIS
CLARIS ORGANIZER 1.0

Claris Organizer 1.0 is an all-in-one personal information manager (PIM) that seamlessly integrates a calendar, contacts, tasks and notes into one compact application. It is an easy-to-use, powerful organizational tool.
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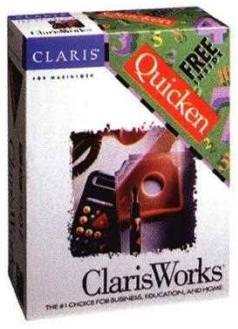

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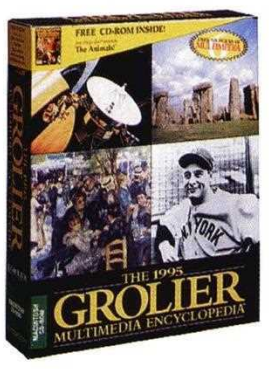

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1995 GROLIER MULTIMEDIA ENCYCLOPEDIA

The CD-ROM-based 1995 Grolier Multimedia Encyclopedia contains more than six hours of multimedia. It features Pathmakers, which are interviews with experts; 8,000 pictures; a graphical time line; updated maps; narrated animation and more.
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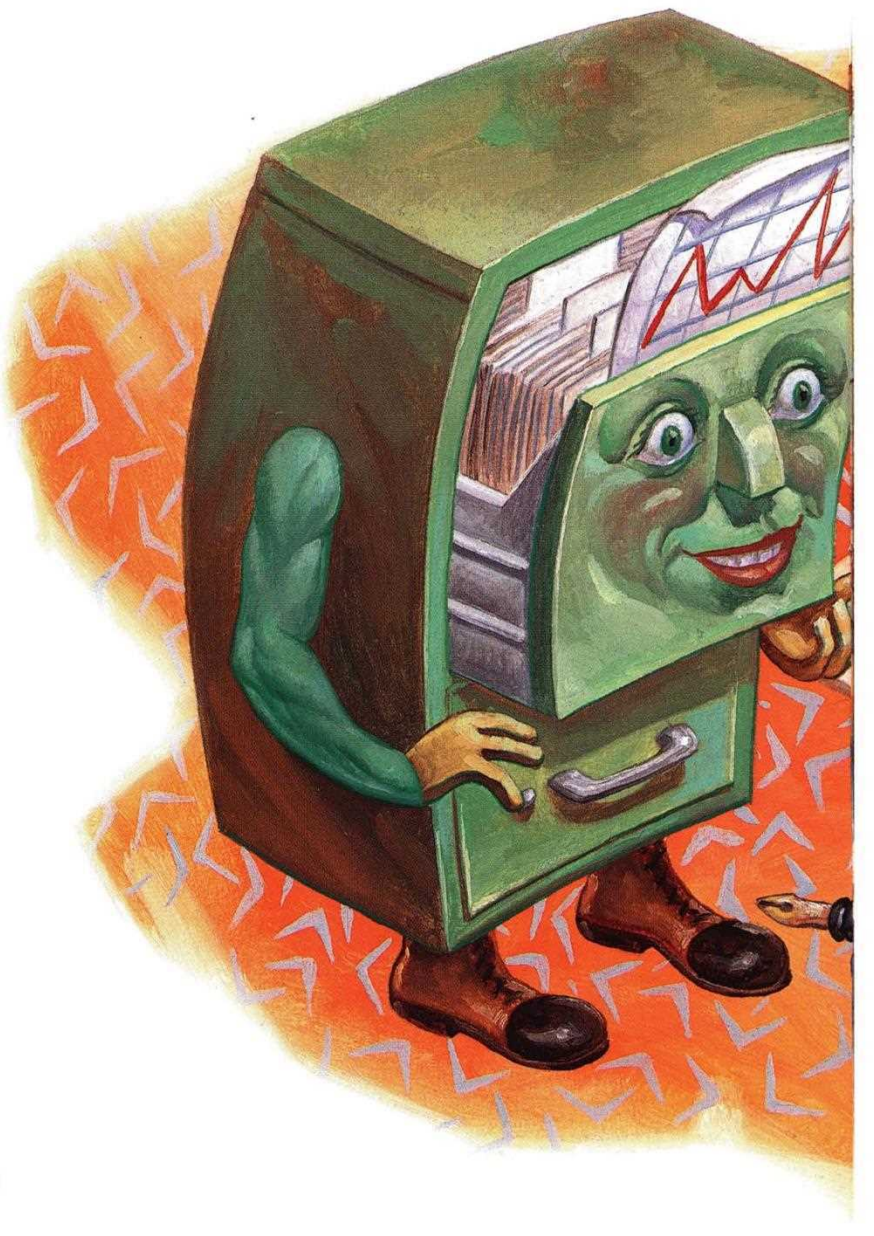

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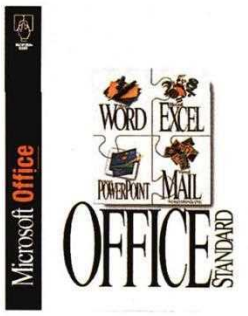

NANAO USA
NANAO FLEXSCAN T2-17TS

The Nanao FlexScan T2-17TS is a 17" autoscanning color monitor. It is compatible with all Macintosh resolutions up to 1,152 x 870 and complies with MPR II and Energy Star standards.
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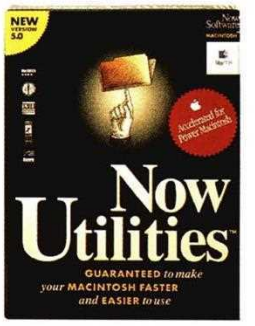

PORTRAIT DISPLAY LABS
PIVOT 1700

The Pivot 1700 monitor's portrait mode allows editing of 8.5" x 11" pages without scrolling. Landscape mode is great for spreadsheets. Features include digital controls, Energy Star compliance, .26-mm dot pitch, and Windows and Macintosh compatibility.
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  Maximum power, expansion, and flexibility make this the most powerful Macintosh Quadra computer ever.
- **Apple® Power Macintosh® 6100/66**
  The most affordable member of the new high-performance line of Macintosh® computers which feature PowerPC™ chips.
- **Apple Power Macintosh 6100/66 DOS Compatible**
  It features a PowerPC™ processor and a 486DX2 processor to run applications for Mac™ OS, DOS, and Windows.
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  Featuring a 66-MHz PowerPC 601 processor, it's flexible and affordable for small business and educational uses.
- **Apple Workgroup Server 8150/110**
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- **Apple® PowerBook® 150**
  Combines the performance of a 33-MHz Motorola 68030 microprocessor with the convenience of a notebook system.
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  Macintosh Quadra performance at under 6 pounds and at a surprisingly affordable price — also PowerPC upgradable.
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  Longer battery run-time, remote network access, and 256-color capability make this an attractive option for mobile computing.
- **Apple PowerBook 540c**
  Take sophisticated audiovisual presentations anywhere with the most powerful color 500 series notebook computer.
- **Apple® PowerBook Duo® 280c**
  The industry's only 16-bit color subnotebook computer, its backlit active-matrix display gives you sharp, crisp color.
- **Apple PowerBook Duo Dock II Plus**
  Supports Apple displays up to 20 inches and includes a high-speed Ethernet port for quick access to network resources.
- **Apple PowerBook Duo MiniDock**
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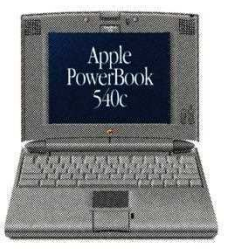
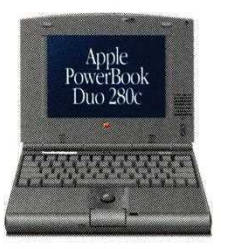
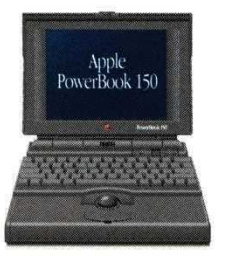
Apple Workgroup Server 6150/66, 8150/110, 9150/120



Apple PowerBook 540c



Apple PowerBook Duo 280c



Apple PowerBook 150

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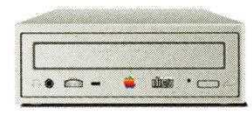

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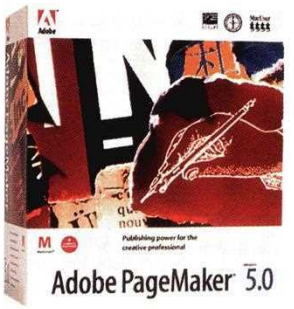

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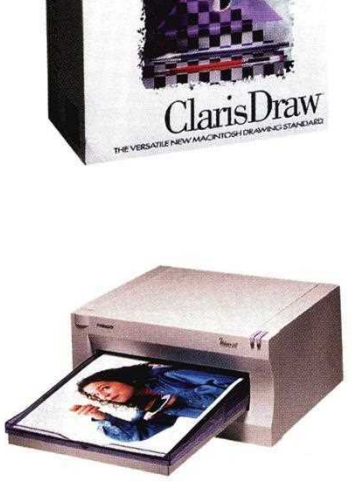

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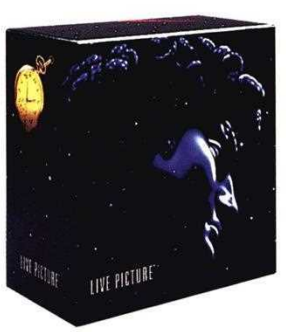

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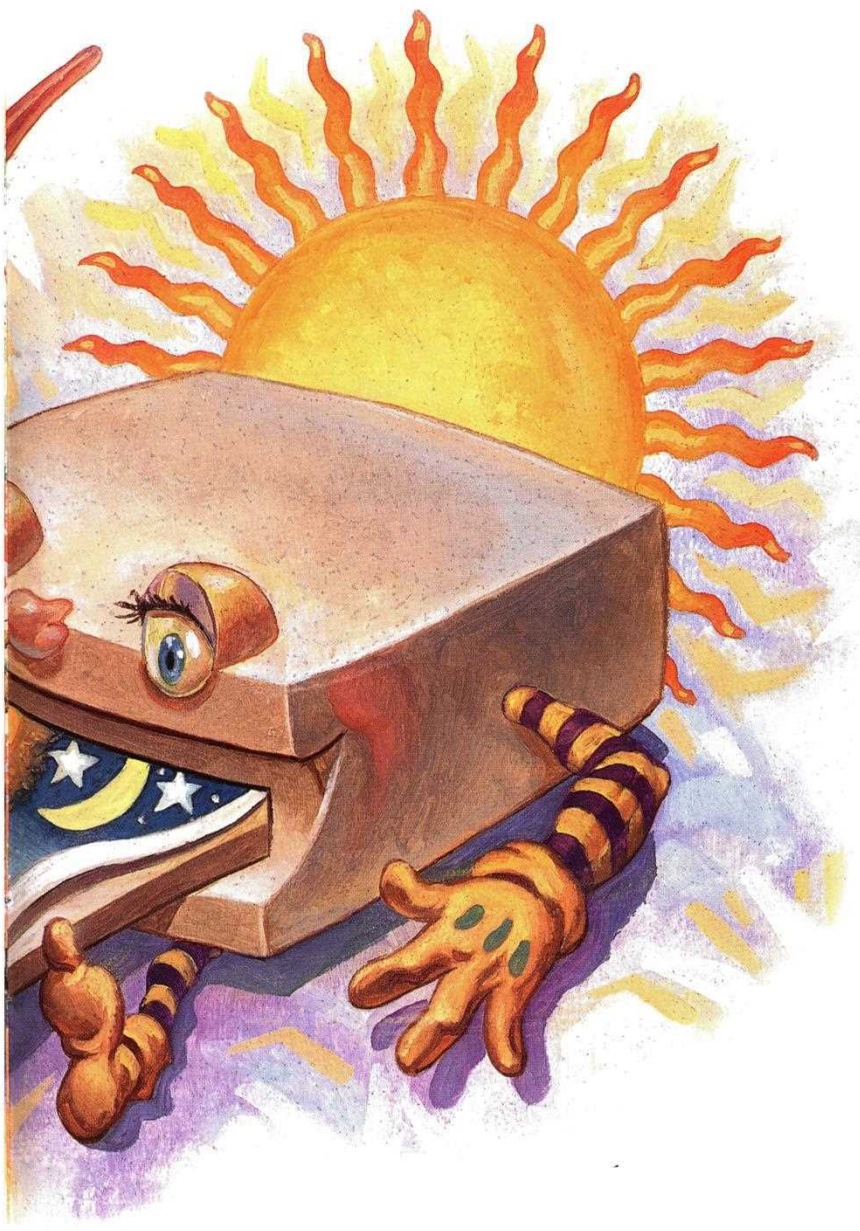

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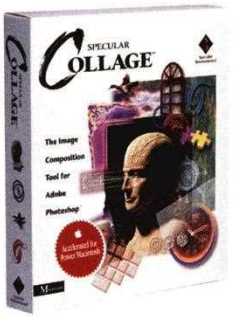

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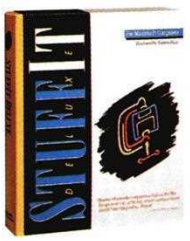

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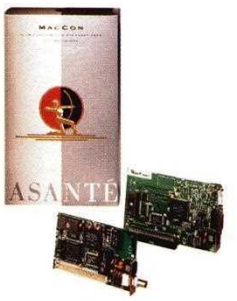

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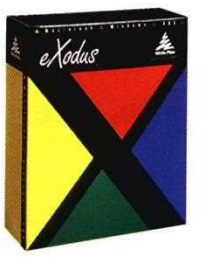

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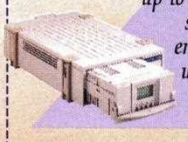

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Macs cross platforms at UNC

The Office of Information Technology at the University of North Carolina at Chapel Hill is charged with finding and implementing new computer solutions that meet the needs of both student and staff installations. A new and highly flexible computer-instruction classroom with 35 DOS-equipped Power Mac 6100s is one project that Linwood Futrelle, the office's director of services, said is showing great promise. Professors in seven departments have already reserved the lab for two or more fall classes, including math professors who want to teach Wolfram Research Inc.'s Mathematica on the Mac, computer science faculty members who will run C/C++ programming courses on either platform, and an English professor who will use it to teach with his own courseware written for PCs. "It's truly multi-use because they can teach any application, from the standard Microsoft Word beginners class to accounting classes using Excel" or popular PC-based spreadsheet programs, Futrelle said.

Fast, flexible lab design

To minimize problems, the machines are configured conservatively. "When you're running a mass-use facility, 'simple' equals happiness," Futrelle said. "Most professors don't want to mess around with things, and even the professors who are techno-geeks want to get in, get the instruction over and go on about their business." The office team installed 16 Mbytes of RAM on both the Mac and PC boards in each Power Mac to ensure that neither side would be crippled when running demanding applications. Each computer has a 10-Mbps Ethernet pipe to an Ethernet switch that controls access to the campuswide network. There is also a group laser printer.

Sites at other universities have encountered networking problems with DOS-equipped Power Macs. Their dual personality seems to have a major limitation: Only one processor can be active on the network at a time. This tosses a wrench into network management. For example, if managers want to install upgraded system software onto the Mac side of all the machines, they must make sure they are not logged onto the network as PCs. "We've run into that too," Futrelle said. "That's just something that we're going to have to live with for the foreseeable future, until some brilliant third party comes up with a fix."

Blueprint for future labs

Networking problems aside, Futrelle said, his office plans to expand the multi-use, Power Mac-based computer lab concept to other locations around the UNC campus. "We've already ordered more [Power Macs] for our campus training center, although we've been waiting for the PCI version," he said.

There is one more obstacle in the way of his first center's success, Futrelle joked. The new lab is located in an out-of-the-way basement, so few summer-school students have discovered it yet — but the help-desk staff is another matter.

"[The help-desk crew] have all been asking if they can 'borrow' [a new Power Mac] for a few days — 'just so we can find out what kind of problems people might have later,' " he said, laughing. "I just hope I can get them all back when it's time for fall classes to start." — By Mitzi Waltz

	INSTITUTION	LOCATION	MACS	NON-MAC PCS	WORK-STATIONS
26	Clemson University	Clemson, SC	2,365	400	250
27	Drake University	Des Moines, IA	2,364	50	5
28	Tulane University	New Orleans, LA	2,355	2,500	300
29	Bowling Green State University	Bowling Green, OH	2,350	1,500	60
30	Wayne State University	Detroit, MI	2,265	2,000	112
31	San Francisco State University	San Francisco, CA	2,215	8,000	500
32	Baylor University	Waco, TX	2,145	464	10
33	University of Massachusetts Lowell	Lowell, MA	2,095	1,200	50
34	University of Colorado Health Sciences Center	Denver, CO	2,015	5,000	10
35	University of Virginia	Charlottesville, VA	1,953	7,500	350
36	University of British Columbia	Vancouver, BC	1,900	4,500	900
37	West Virginia University	Morgantown, WV	1,845	3,500	60
38	Illinois State University	Normal, IL	1,842	4,871	10
39	University of Montana	Missoula, MT.	1,740	3,000	20
40	California State University at Chico	Chico, CA	1,673	1,234	213
41	Case Western Reserve University	Cleveland, OH	1,660	3,500	3,500
42	University of Pittsburgh	Pittsburgh, PA	1,632	2,500	250
43	Marquette University	Milwaukee, WI	1,485	3,000	75
44	University of Mississippi	University, MS	1,412	2,000	150
45	Stephen F. Austin State University	Nacogdoches, TX	1,404	2,800	5
46	University of Nebraska — Lincoln	Lincoln, NE	1,338	2,600	75
47	Medical College of Wisconsin	Milwaukee, WI	1,296	2,000	40
48	Northern Arizona University	Flagstaff, AZ	1,257	3,000	25
49	Washington State University	Pullman, WA	1,227	2,600	500
50	University of Illinois at Chicago	Chicago, IL	1,220	9,500	140

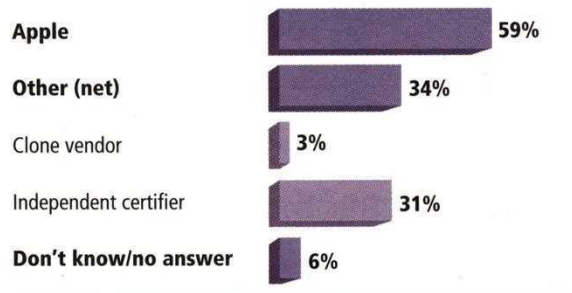
Preferred manufacturers for Mac clone purchases

Base: Sites likely to purchase Mac clones.

Education *From Page 56*

Communications Corp. and Mosaic from the National Center for Supercomputing Applications are the Web browsers of choice and among the most popular new software packages. Joe Mambretti, director of information technologies for the campus information technologies organization at the University of Chicago (No. 6), said that Netscape's emerging compliance with Adobe Acrobat will give it the edge at his site, where document-centered electronic publishing is a hot topic. HTML (Hypertext Markup Language) authoring tools for the Mac are also at the top of many applications-to-buy lists at colleges, with extraordinarily high user demand pushing both software and hardware purchases and the need for increased support services.

Preference for Mac clone certifiers



Base: Sites likely to purchase Mac clones.

"Our department teaches courses in 'How to Write HTML' and 'Intro to Web Server Maintenance,' and they are always oversubscribed," Carnegie-Mellon's Kelso said.

Large-scale software concerns

Site licenses may push — or halt — software switching. The larger the site is, the more money it is likely to save through software standardization and site licenses. "Departments want one canned solution — all WordPerfect products or all Microsoft products or all Lotus products," said University of Michigan's Palms. What suite gets the nod may now depend as much on which company has the best site-licensing program as on features. "We'll have to see how well Microsoft Corp.'s new licensing program goes," Palms said of the recently announced Microsoft Select 3.0 program, which changes the way the software vendor lets large sites juggle concurrent use of its products and hikes prices. "In the past, they've had kind of a hard line. And we are in negotiations with Lotus [Development Corp.] and Novell Inc./WordPerfect as well."

Several Mac managers indicated that Microsoft's dominance of productivity software appears to be slipping, now that competitors have dropped entry prices and developed attractive site-license plans. "Some people here have switched over to WordPerfect for the Power Mac because they were annoyed with Microsoft — [especially those who] had upgraded to Word 6.0 and felt really burned," said John Steggal, a graduate student who teaches computer classes and acts as an unofficial Mac guru at the No. 10 site, the University of California at Berkeley. Although Microsoft Excel and Word are still campus standards and widely used, he said, "There's general widespread unhappiness with Microsoft — and when you can get a brand-new copy of WordPerfect on campus for $75, the resistance to switching is pretty low."

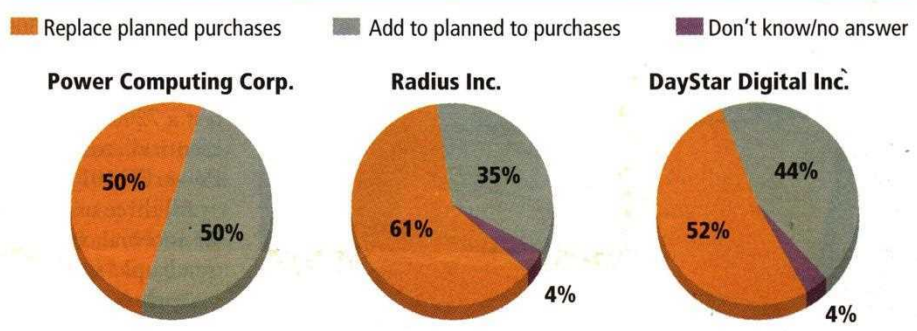
Looking ahead

Many Mac advocates are pinning their hopes on the power of OS improvements to break through barriers to wider acceptance, at least evening out those Mac and PC numbers, but are doing so guardedly.

"Am I looking forward to Copland?" USC's Pepin said. "Yes, but I'm more excited about [Gershwin]. I'm looking for a true pre-emptive multitasking, memory-protected operating system."

Windows 95 looms large in the future of academic computing; these managers said, so unless Apple can once again deliver on the promise of an OS and platform that go above and beyond what the competition has to offer, it will stay in a holding pattern. □

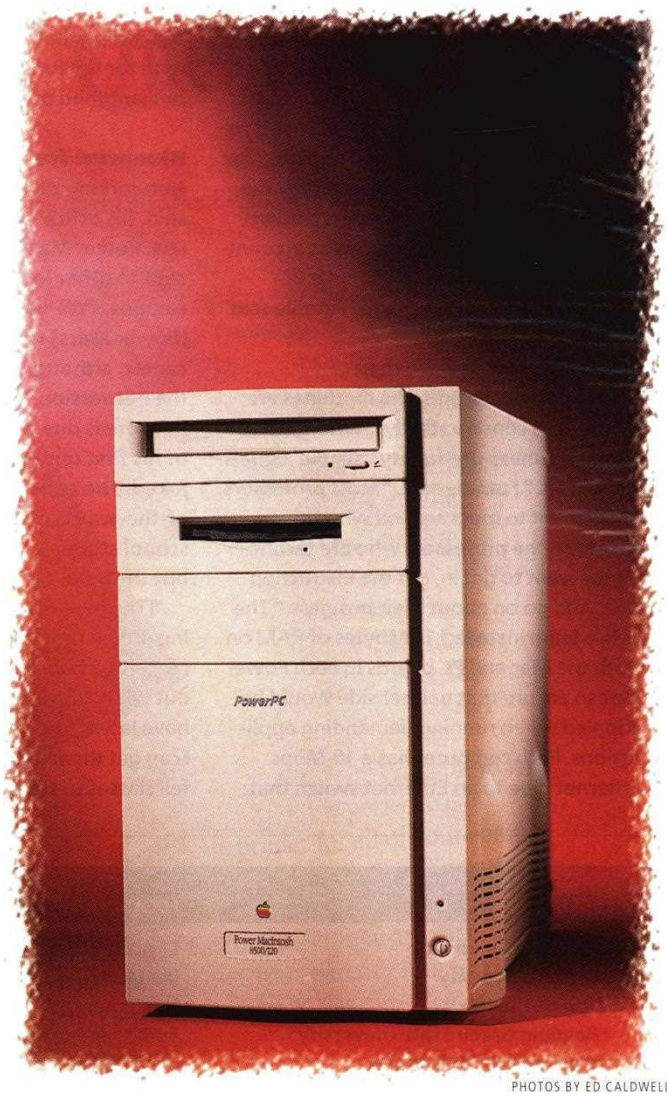
The effect of Mac clone purchases on Apple Mac planned purchases



Base: Sites likely to purchase clones from a specific manufacturer.

PCI: ROUND 2

Apple's second iteration of PowerPC-equipped machines commenced in June with the release of the high-end Power Macintosh 9500. At Macworld Expo this week, Apple will fill out its line of PCI Macs with the Power Mac 7200, 7500 and 8500 series, which build upon the evolutionary changes of the first-generation Power Macs and add a few radical new features.



PHOTOS BY ED CALDWELL

New machines bring power to the masses

By Ric Ford and Henry Norr

Second-generation RISC for the rest of us — that could be Apple's slogan for the four new PowerPC-based desktop models the company will release this week.

The Power Macintosh 7200/75, 7200/90, 7500/100 and 8500/120 bring much of the performance and expandability of the recently introduced 9500 series — as well as some unique innovations of their own — into the company's mainstream business line.

For users, the result is a clear win: more bang for the buck; a stronger base for future expansion and upgrading; and, with the higher-end machines, a new level of built-in multimedia sophistication (see story, next page).

Four models, two boxes

We tested pre-release units of three of the new models: a 7200/90 with a 90-MHz PowerPC 601 processor, 16 Mbytes of RAM and a 540-Mbyte Quantum Maverick hard drive; a 7500/100 with a 100-MHz 601, 16 Mbytes of RAM and a Conner Peripherals 1.08-Gbyte drive; and an 8500/120 with a 120-MHz PowerPC 604, 32 Mbytes of memory and a 2-Gbyte Seagate Barracuda drive. We did not test a 7200/75, which, according to Apple, is identical to the 7200/90 except that its PowerPC 601 CPU runs at 75 MHz.

All three units included an AppleCD 600i, an internal version of the company's new quadruple-speed CD-ROM drive.

Apple said the evaluation units it provided us were identical to production hardware, except that shipping units might have different hard drives; the system software we used came from a CD-ROM that Apple said was "nearly final."

The 8500 comes in a modified version of the three-slot minitower case previously used for the Quadra 800 and 840AV and the Power Mac 8100 series; owners of any of those models will reportedly be able to upgrade for about $2,000. Like the 9500 but 3 inches shorter, the 8500 has its power-on button in front (programmer's switches have disappeared) and comes with both 10BASE T and Apple AUI (attachment unit interface) connectors for Ethernet.

Most of the other ports are familiar: There are two GeoPort serial ports, one external SCSI port, a standard monitor connector, an ADB connector, and stereo minijack sound-in and sound-out ports. An innovation on the 8500 — also found in slightly different form on the 7500 — is a new VCR-style AV panel on the back, which neatly consolidates ports

The Power Mac 8500 (above) looks nearly identical to the 8100, but its facade masks three PCI slots and features not found in the NuBus-based Power Macs. The 7200 and the 7500 (left) mimic the 7100 design but add PCI and accessibility to expansion options that the 7100 lacked.

for composite, S-video, and right and left audio input and output.

In addition to its floppy and CD-ROM drives, the 8500 has room internally for two or three hard drives and for three expansion cards — in this case, PCI rather than NuBus cards. Connecting cards and drives can be awkward, but those jobs are a breeze compared to adding memory, which still requires disconnecting all cables and cards (even the PowerPC daughtercard) and removing the logic board.

Happily, 7200 and 7500 buyers wishing to enhance their systems won't confront such ordeals. Thanks to the clever industrial design those systems share, users or technicians can get complete, unencumbered access to the entire logic board in less than a minute. Opening the case involves simply pressing two buttons and sliding the case cover off. Lifting a simple plastic cover exposes the three PCI slots in the left rear of each model.

> Thanks to clever design, users can get complete access to the 7200 and 7500 logic board in less than a minute.

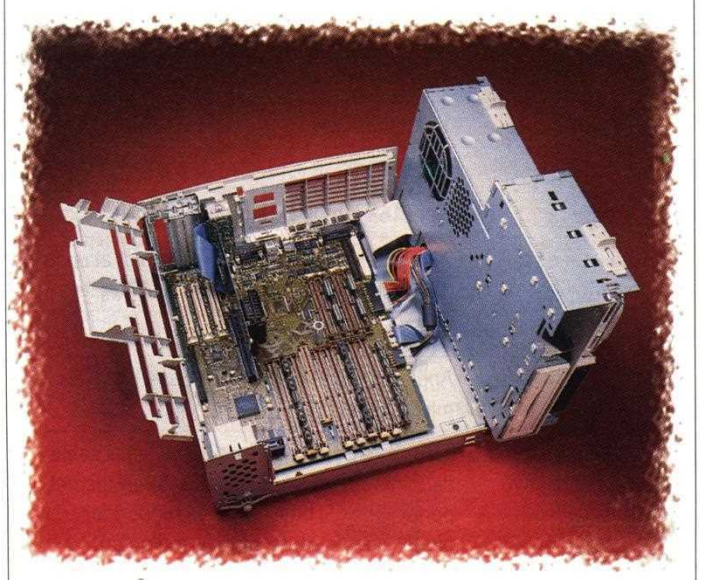
The power supply, floppy drive, CD-ROM drive and standard hard drive, as well as an extra 3.5-inch bay, sit in a steel basket hinged to the right side of the case. After unplugging the power cord and sliding two plastic latches, you can simply pivot the basket 90 degrees on its hinge to access slots for dynamic RAM, video RAM and Level 2 cache (an extra in the 7500 as well as both 7200 models).

On the back of the 7200/7500 case are the same ports as on the 8500, except that the 7200 has no AV panel and the 7500 has no video-out connectors.

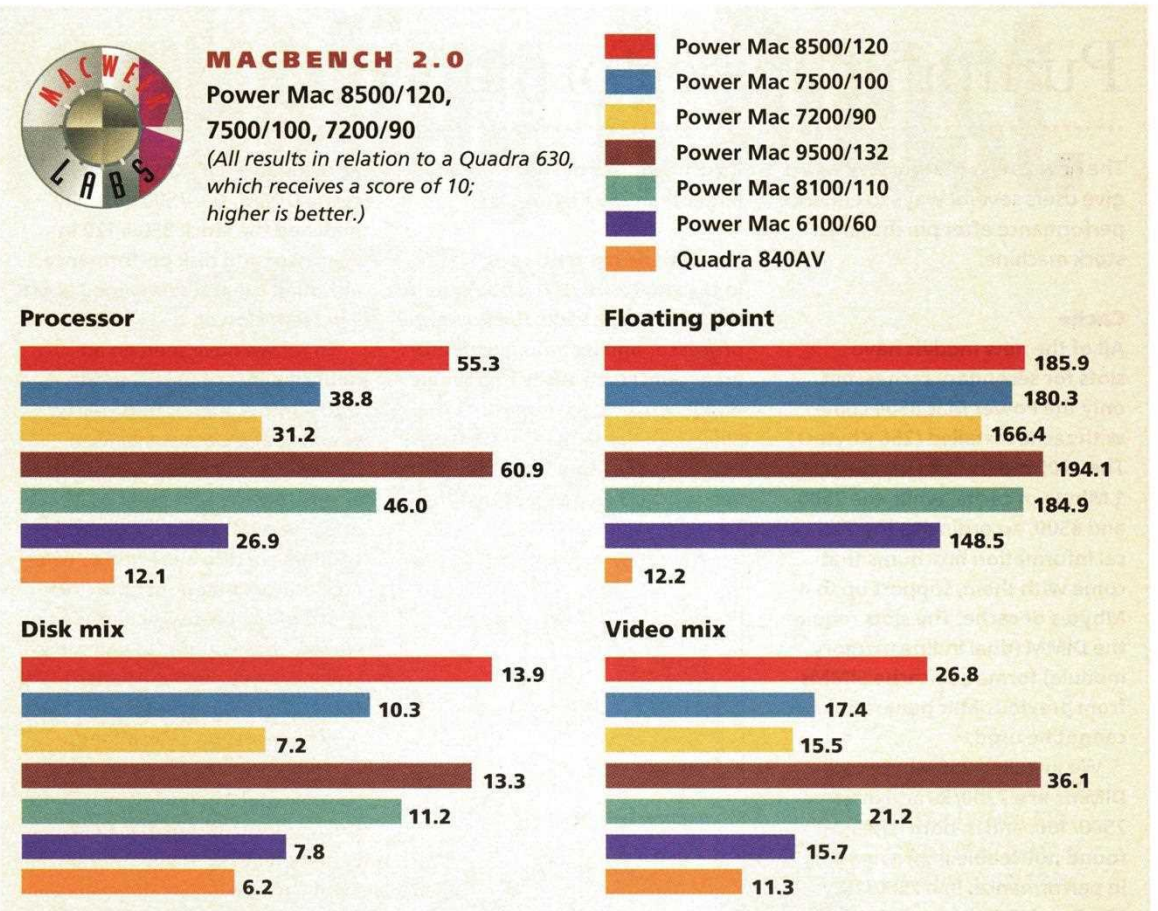
On the boards

The logic boards of these new systems share many features with each other and with the 9500. The boards of the 7500 and the 8500, in fact, are identical except for the 8500's video-out circuitry. As in the 9500, the CPU is installed in a daughtercard, which can be easily removed and replaced as faster PowerPC processors become available from Apple or third parties. The timing of the main system

See Power Mac, next page



Apple's imaginative design makes it much easier to add RAM and expansion cards to the 7200 and 7500 than almost any previous Mac.



The Power Mac 7200, 7500 and 8500 results were derived from pre-production versions of those machines running System 7.5.2 with pre-release System enablers. Video resolution was 640 by 480 pixels with 256 colors.

Apple finally gets it right with 7500, 8500 AV options

By Ric Ford

When Apple built digital video and high-fidelity audio into the motherboards of the Quadra AV models, it stepped ahead of its competitors, and the market responded. The discontinued Quadra 840AV is still a respected computer with a strong resale value. The first Power Macs offered an AV option across the line, which was also popular, but some customers decided against paying the extra cost and taking the small performance penalty resulting from its 32-bit architecture.

With the Power Mac 7500 and 8500, Apple wipes out any objections on both counts, injecting high-performance video into the machines at no extra cost. These boxes share a new video subsystem that is better and faster than that of all previous AV Macs. Video-capture performance is dramatically improved on both models, but only the 8500 offers video output (thanks to an extra complement of chips on the motherboard). This video output circuitry is significantly more flexible than previous designs.

Sound design

Audio in all three new models is similar to other Power Mac audio, which is to say excellent. The Macs digitize and play back clean, full-range audio at standard CD specifications (44.1-kHz, 16-bit stereo). Apple's new Sound Manager 3.1 software is far more efficient than earlier versions. Even capturing audio at CD quality has minimal impact on video frame rates.

The addition of RCA audio jacks on the back panels of the 7500 and 8500 is a welcome improvement, but the 7200 suffers from having only Apple's semistandard, stereo mini-jack. Audio input is set up to accommodate the unique PlainTalk microphone, and it will not work with any normal microphone. Most line-level devices (such as home stereo systems) should work successfully with the audio I/Os, although some attenuation may be needed to tame hot inputs.

Live TV

Previous AV Macs were unable to simultaneously output both video and Mac graphics, and switching from one to the other to print to videotape could be an annoying process. With the maximum 4 Mbytes of video RAM, the Power Mac 8500's dual video output streams drive both a Mac monitor and a video device at the same time. You configure overlap of the two screen images through a subpanel within Sound & Displays, a peculiar new control panel that flies in the face of Macintosh interface standards (see Page 68).

Back in the real world, connections on the rear panel are more understandable: Standard S-video and composite (RCA) jacks are supplied for input (and output on the 8500).

Flicker filtering ("convolution") is available at all video output depths, including a 24-bit

See Video, Page 64

Pumping up performance

The new Power Macintosh models give users several ways to enhance performance after purchasing a stock machine.

Cache

All of the new models have slots for secondary caches, but only the Power Mac 8500 comes with cache installed (256 Kbytes). The 7200 models can handle up to 1 Mbyte of cache, while the 7500 and 8500, according to the Technical Information brochures that come with them, support up to 4 Mbytes of cache. The slots require the DIMM (dual in-line memory module) format, so cache SIMMs from previous Mac generations cannot be used.

We installed 256-Kbyte cache DIMMs in a 7200/90 and in a 7500/100, and in both cases we found noticeable improvements in performance. In a 7500/100, MacBench 2.0 showed CPU performance increasing 14 percent (to about Power Mac 8100/100 levels) and disk and graphics performance jumping a whopping 30 percent. Installing the same card in a 7200/90 produced even more dramatic results, including a 30 percent jump in processor performance. The 7200/90 with cache installed actually outperformed the 7500/100 with no cache in MacBench's processor and video mix tests.

The real-life benefits of cache will vary depending on the applications involved and other factors, but our evidence strongly suggests that adding a 256-Kbyte cache to the 7200 and 7500 is a worthwhile investment. We did not test caches larger than 256 Kbytes.

Processor upgrades

In the 7500 and 8500 models, as in the Power Mac 9500, the PowerPC processor and its timing oscillator are mounted on easily removable daughtercards. In the case of the 8500/120, the only faster PowerPC currently available is the 132-MHz version, and we suspect that the modest speed differential would not justify an upgrade; when a 150-MHz version is released, however, some 8500 owners may wish to make the jump.

> **All four new models have accessible bays for at least one extra hard disk, so you can add a speedy new disk without losing the one in the system.**

The case of the 7500 is more interesting, because a new CPU card could mean not only a faster clock speed but also a newer CPU — the PowerPC 604 in place of the stock 601. When we removed the 120-MHz 604 CPU card from the 8500/120 and installed it in the 7500, MacBench showed a 20 percent increase in processor performance and a 50 percent jump in graphics speed. When we also added a 256-Kbyte Level 2 cache DIMM, the 7500 virtually matched the stock 8500/120 in processor and disk performance, although graphics remained about 9 percent slower.

So far we have seen no announcements of CPU upgrade cards from Apple or third-party vendors, and because we don't know how much they'll cost, it's impossible to judge their cost-effectiveness. Some third-party vendors are also expected to offer accelerators that boost the clock speed of the processor already installed; these upgrades will carry lower prices than replacement CPU cards, but reliability and effectiveness must still be determined.

(Apple told us it has not yet tested installation of slower-than-stock CPU cards, and it is hard to imagine why anyone would want a performance downgrade, but we tried the 7500's 100-MHz PowerPC 601 card in the 8500 and everything appeared to function normally.)

All four new models also have ample room for more dynamic RAM (up to 256 Mbytes in the 7200 and 512 Mbytes in the 7500 and 8500) and video RAM (up to 4 Mbytes in all four machines). All of them also have easily accessible bays for at least one extra hard disk, so it's possible to add a speedy new disk without losing the one pre-installed in the system. The 7500 and 8500, with Fast SCSI support on their internal SCSI buses, take particular advantage of very fast drives. — By Henry Norr

Power Mac

From previous page

bus — the pathway connecting the processor and memory — is controlled by the CPU clock. With the 8500's 120-MHz 604, the processor bus operates at 40 MHz; in the 7500, with its 100-MHz chip, this bus actually runs faster, at 50 MHz. (Other buses are set to constant clock rates — 33 MHz in the case of PCI, for example.)

Slot machines

The 7500 and 8500 have eight slots for DIMMs (dual in-line memory modules), the new 64-bit, 168-pin memory standard Apple has adopted; users can thus install up to 512 Mbytes of RAM. (No memory is soldered to the logic boards.) DIMMs can be inserted one by one, but if two of the same capacity are installed in paired slots, the system automatically interleaves them to maximize performance. Both boards have a separate DIMM slot that can hold up to 1 Mbyte of Level 2 cache RAM; in the 7500 the cache is an extra-cost item, while the 8500 ships with a 256-Kbyte DIMM installed. Cache SIMMs from previous machines aren't transferable; 72-pin RAM SIMMs can be used only in conjunction with third-party add-ons.

In addition to their three PCI slots, the 7500 and 8500 boards have a digital audio-video (DAV) connector designed to give video-compression cards direct access to the systems' video circuitry. Both models also have two SCSI buses; in contrast to the 8100 series, both support synchronous transfers and 10-Mbytes-per-second Fast SCSI on the internal bus.

Unlike the 9500, which requires a video card, the 7500 and 8500 have built-in display capabilities. Each machine ships with 2 Mbytes of VRAM, which support up to 24-bit color at resolutions up to 832 by 624 pixels, 16-bit color at up to 1,152 by 870 pixels and eight-bit color at 1,280 by 1,024 pixels. By adding two more VRAM DIMMs, users can increase total VRAM to 4 Mbytes, which will support 24-bit color at up to 1,024 by 768 pixels and 16-bit at up to 1,280 by 1,024.

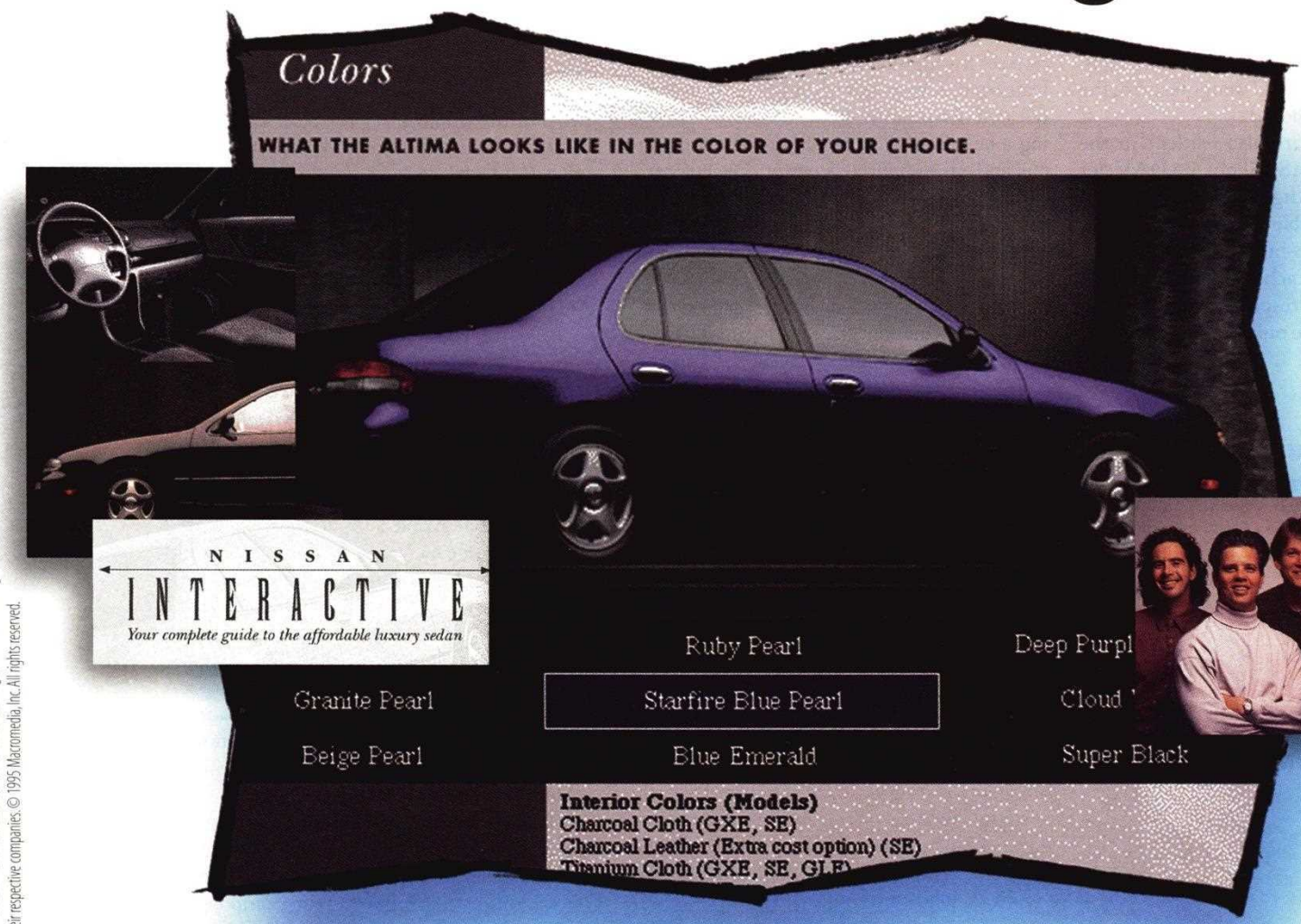
For the 7200, Apple developed what a company official called "a thrifty implementation

See Power Mac, Page 64

CPU QUICK FACTS

Model	Power Macintosh 7200/75 and 7200/90	Power Macintosh 7500/100	Power Macintosh 8500/120
CPU	75-MHz PowerPC 601, 90-MHz PowerPC 601	100-MHz PowerPC 601	120-MHz PowerPC 604
Minimum configuration	8/500/CD/4x	16/500/CD/4x	16/1,000/CD/4x
Slots	Three PCI	Three PCI	Three PCI
Memory	Four 168-pin DIMM slots	Eight 168-pin DIMM slots	Eight 168-pin DIMM slots
Video	1-Mbyte VRAM supports 16-bit color at up to 832 by 624 pixels; expandable to 4 Mbytes	2 Mbytes VRAM supports 24-bit color at up to 832 by 624 pixels; expandable to 4 Mbytes	2 Mbytes VRAM supports 24-bit color at up to 832 by 624 pixels; expandable to 4 Mbytes
MacBench 2.0 CPU score	7200/75: n/a; 7200/90: 31.2	38.8	55.3
Bundled hardware	Apple Extended Keyboard, mouse	Apple Extended Keyboard, mouse, PlainTalk microphone	Apple Extended Keyboard, mouse, PlainTalk microphone
Additional features	Slot for cache DIMM, AAUI and 10BASE T Ethernet ports	CPU on replaceable daughterboard, slot for cache DIMM, AAUI and 10BASE T Ethernet ports, two SCSI buses, built-in support for digital video capture and display	256-Kbyte Level 2 cache; CPU on replaceable daughterboard; AAUI and 10BASE T Ethernet ports; two SCSI buses; built-in support for digital video capture, display and output
Expected street price	$1,699 - $1,749 (7200/75) $1,899 - $1,949 (7200/90)	$2,699 - $2,749 (500 MB) $2,899 - $2,949 (1 GB)	$3,999 -$4,099 (1 GB) $4,199 -$4,299 (2 GB)

How XRONOS & Director Gave Nissan's Marketing A Boost.



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Jeff Southard, Kris Wainscott, Norbert Hendrikse, and Lee Cline of San Francisco-based XRONOS Inc., co-creators of Nissan Interactive for Nissan Motor Corporation.

To produce an interactive direct mail fulfillment kit that would give interested customers more dynamic information about the Altima, Nissan Motor Corporation turned to Chiat/Day inc. Advertising, XRONOS Inc., and Macromedia Director.

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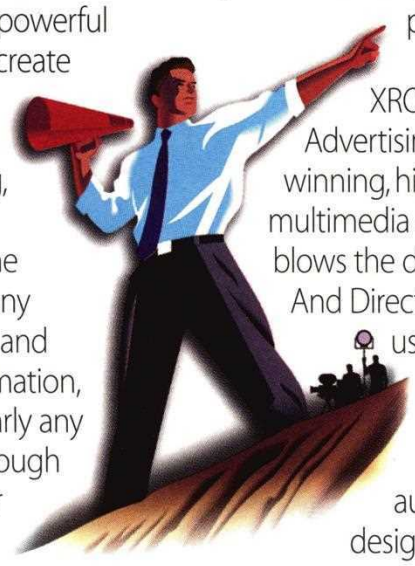

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Power Mac

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of the same basic architecture" with three PCI slots; a slot for an optional cache DIMM; four DRAM DIMM slots, supporting up to 256 Mbytes of RAM; and four VRAM DIMM slots. But the systems ship with only 1 Mbyte of VRAM, providing 16-bit color at resolutions up to 832 by 624 pixels and eight-bit color on displays up to 1,152 by 870 pixels. There is no slot for a CPU daughtercard; the 601 is soldered to the board.

Other economies are also evident in the 7200: There's only one SCSI bus, no DAV slot and no support for digital video (although Apple says you'll be able to upgrade a 7200 to the 7500). While 128-bit buses connect the processor to DRAM, cache and VRAM on the 7500 and 8500, the corresponding connections on the 7200 boards are only 64 bits wide. The system bus runs at 37.5 MHz in the case of the 7200/75 and 45 MHz in the 7200/90.

System 7.5.2

The new systems are slated to ship with System 7.5.2, which includes a new native SCSI Manager and Resource Manager, Apple's new Open Transport networking architecture, and updates to several other components. The version set to ship this week will also offer some features that were not included in the version released two months ago with the 9500, including a new Sound & Displays utility (see Page 66) and an enhanced Energy Saver control panel, which offers PowerBook-like sleep options as well as commands for scheduling the automatic start-up and shutdown of the machine. In addition, the system CD-ROMs for all four new machines include Apple's QuickTime VR technology; the disc for the 7500 and 8500 also includes QuickTime Conferencing, which we did not test. Apple is also bundling Lotus Notes with all of the new CPUs.

While the new system seems to work with most mainstream Mac applications, Symantec Corp. officials said it was incompatible with several of their utilities, including CopyDoubler, Suitcase and Symantec AntiVirus for Macintosh. Users planning to put one of the new models on a TCP/IP network should first check the read-me file on the CD that comes with their system, which notes incompatibilities between Open Transport and a long list of current network-oriented applications.

Users of the 9500 trying to dial into the Internet via Serial Line Internet Protocol or Point-to-Point Protocol have had an especially hard time making their connections. The new power-management code may also raise some compatibility issues; in the 9500 it caused problems for Qualcomm Inc.'s Eudora Pro.

The performance race

In the shadow of the Power Mac 9500, this week's crop sets no new performance records; in fact, of these new machines, only the 604-powered 8500 outpaces the 9-month-old 8100/110. But that's not the point: Apple's goal with these systems was to bring performance previously available only at the high end of the product line (along with PCI and other new features) into the Mac mainstream, and in that light, it has succeeded admirably. As our MacBench 2.0 results show, the 8500/120 is only marginally slower (in line with their respective processor clock speeds) than the 9500/132 except in the video mix tests, where the 9500 benefits from the superior performance of ATI Technologies Inc.'s PCI display card installed in our test unit.

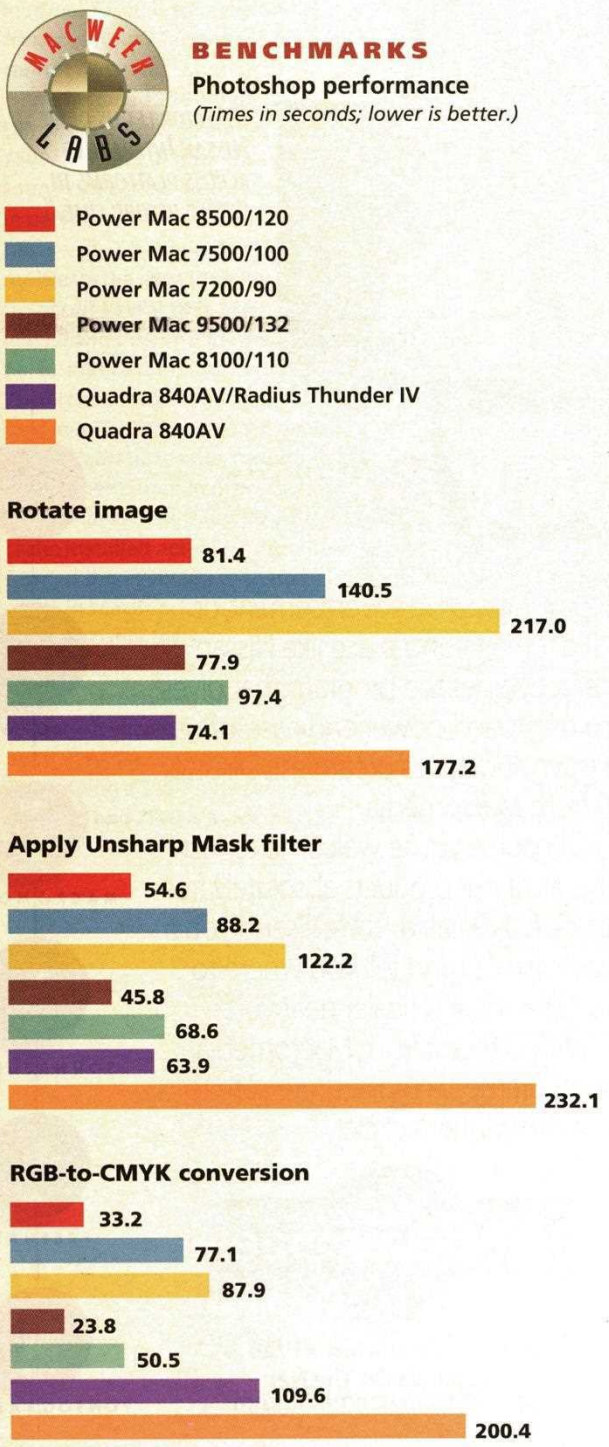
Going down the line, the new machines scale

See Power Mac, Page 66

BENCHMARKS

Photoshop performance

(Times in seconds; lower is better.)



Tests performed with a preliminary version of Adobe Photoshop 3.0.4 on a 1.6-Mbyte image in an 11-Mbyte partition. Quadra 840AV tested with and without a Radius Thunder IV/GX accelerated graphics card.

Video

From Page 61

setting. In previous AV Macs, convolution was available only at eight bits or less, and maximum depth was 16 bits.

These improvements are all useful, but the real news is video-capture performance far better than any previous AV Mac and similar to the expensive first generation of QuickTime accelerator cards.

The bundled Apple Video Player is a simple, friendly application for selecting video input, capturing movies and displaying live video. (Unfortunately, it cannot open or play QuickTime files.)

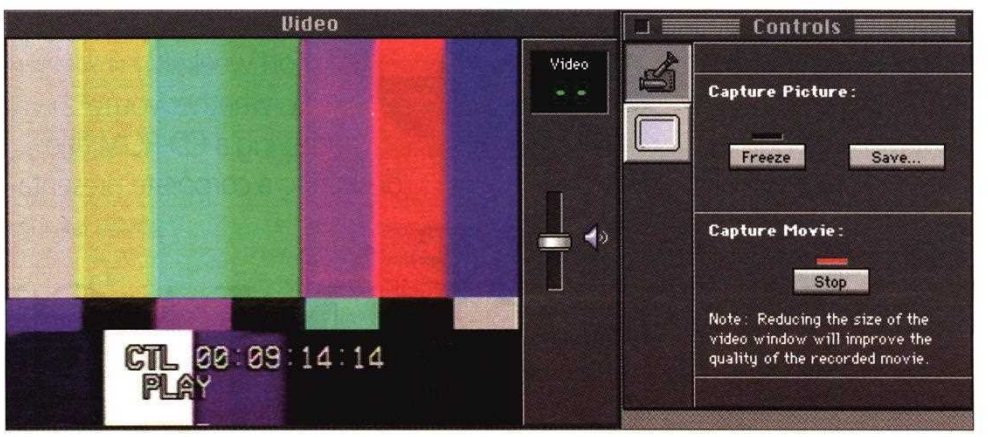
Using a SledgeHammer disk array and a PCI SCSI JackHammer card from FWB Inc., we successfully captured quarter-screen video (320 by 240 pixels) with CD-quality audio on the 8500 at a full 30 frames per second with Apple's Component Video compression setting. We disabled AppleTalk, which caused stuttering in both audio and video captures, and disabled virtual memory and all other nonessential extensions.

Capturing to a fast, internal Barracuda hard drive that Apple supplied, we got close to 30 frames per second on both the 8500 and 7500 but lost a few frames every few seconds. Changing disk cache size in the Memory control panel had no apparent effect.

Capturing to Apple's slower, 1-Gbyte internal drive on the 7500, average frame rates dropped to about 15 fps with CD-quality audio at the quarter-screen size. Shrinking the movie size to 160 by 120 pixels increased the capture rate to almost 30 fps in this configuration.

Attempts to capture still frames with Apple Video Player were blocked by error messages. The quality of still frames cut from a full-screen QuickTime movie captured at the Component Video compression setting looked good. □

The bundled Apple Video Player is a simple application that displays video input on the Mac screen and also lets users select among video input sources.



Apple Video Player can record video clips, along with audio, as QuickTime movies or capture single frames in PICT format.

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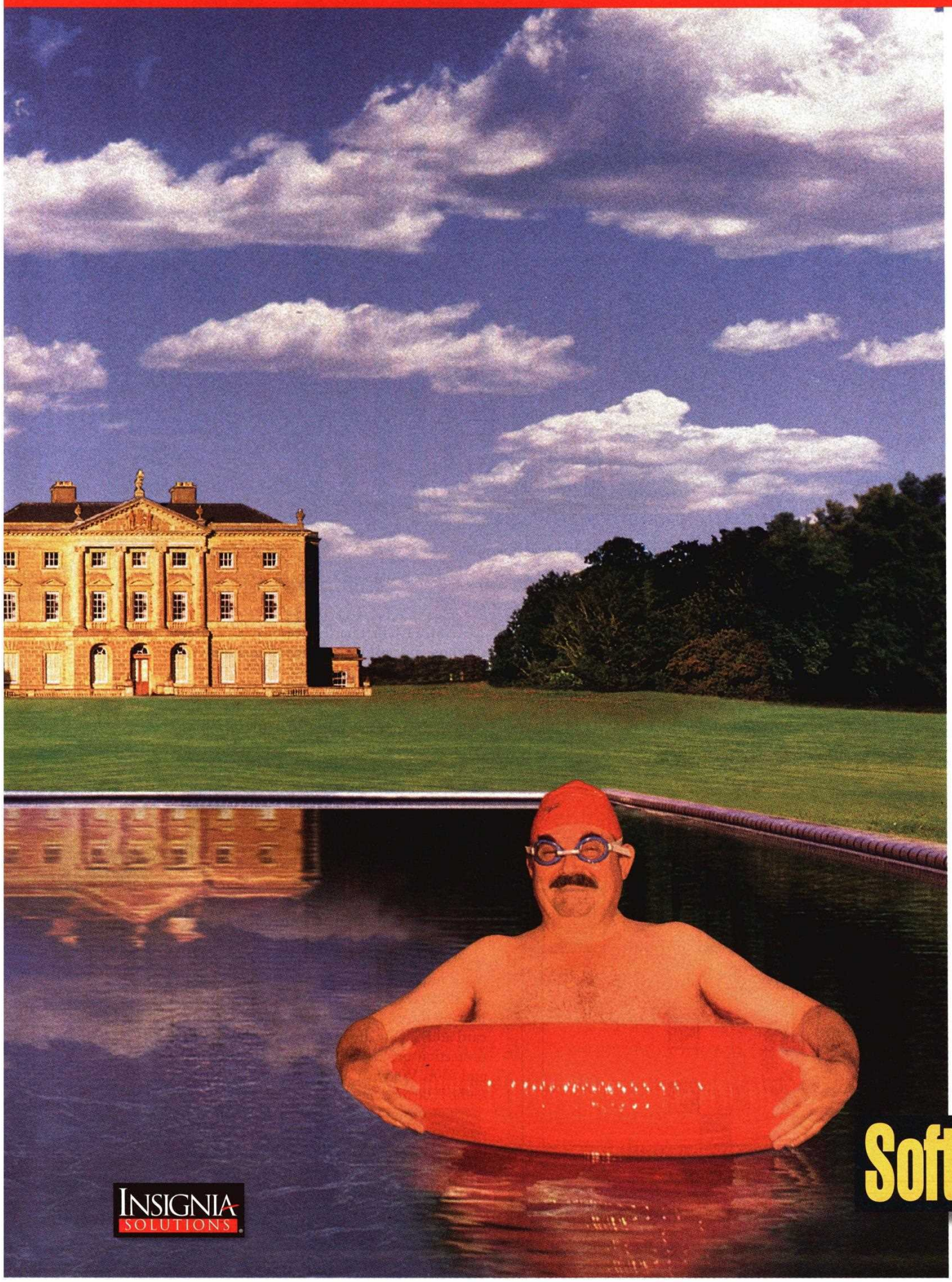

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Power Mac

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about as you would expect, not only in MacBench but also in testing with real-world applications. When, for example, we performed an arbitrary rotate on a 1.6-Mbyte image with Adobe Photoshop 3.0.4, the Power Mac 7200/90 needed 3 minutes, 36 seconds to do the job; the 7500/11 did it in 2:20; and the 8500/120 polished it off in just 1:20. By contrast, an 8100/80, last year's top-of-the-line system, needed 2:33. Similarly, a find-and-replace operation in a nine-page ClarisWorks 4.0 document, which took 6.2 seconds in a stock Quadra 630 and 4.1 seconds in the same machine with a PowerPC card installed, took only 2.5 seconds in the 7200/90, 2 seconds in the 7500/100 and 1.4 seconds in the 8500/120.

> With three PCI slots and four or eight DRAM slots, all four machines offer a fair amount of room for expansion.

One of the most welcome improvements the new machines bring is better disk I/O performance; in particular, they take better advantage of faster hard disks than previous-generation Macs do. (The reason is apparently a new SCSI controller that finally supports Fast SCSI and synchronous transfers on the internal bus of the 7500 and 8500, plus System 7.5.2's native version of SCSI Manager 4.3.)

Unfortunately, we don't know what drives will be in production units; we can only hope that Apple, having made so much progress in improving its I/O architecture, will now break with its frequent practice of hobbling its systems with slow drives.

Conclusions

Official Apple prices were not available in time for this review, but company officials told us they expect street prices for the new systems to be about $1,600 for a 7200/75 with 8 Mbytes of RAM, a 500-Mbyte hard drive and a 4x CD-ROM drive; about $2,000 for the 90-MHz version of the same machine; about $2,800 for a 7500/100 with 8 Mbytes of RAM, a 500-Mbyte hard drive and CD-ROM; and about $4,000 for an 8500/120 with 16 Mbytes of RAM, a 1-Gbyte hard drive and CD-ROM.

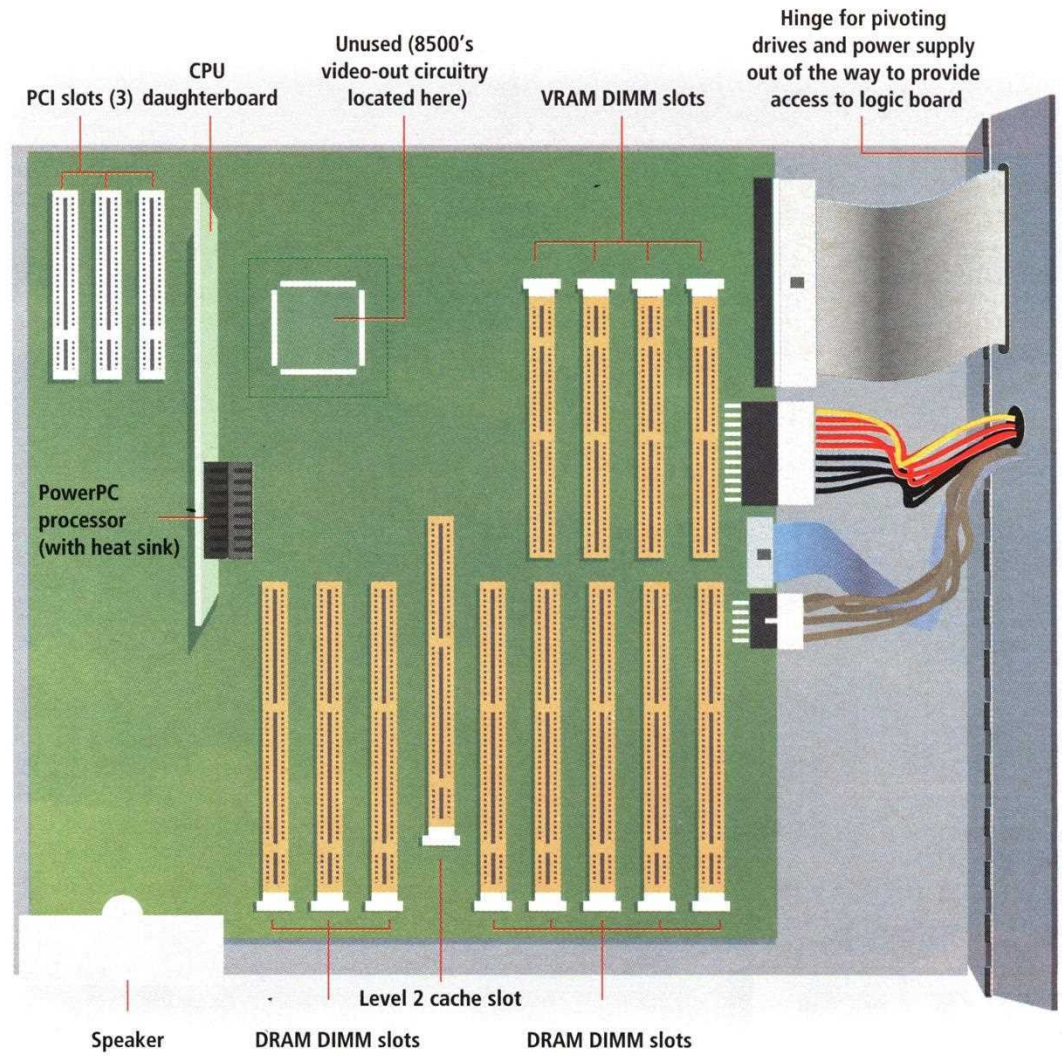
Those prices are roughly comparable to those on base configurations of the 6100/60, 7100/66 and 8100/80 when they were introduced 17 months ago. For about the same money, the new machines offer 30 percent to 50 percent more processing performance; two to four times as much hard disk space; speedy CD-ROM drives at no extra charge; and, at least in the case of the 7500 and 8500, twice the memory. And the 7500 and especially the 8500 offer impressive digital video capabilities without the compromises last year's more limited AV cards entailed.

With three PCI slots and four or eight DRAM slots, all four machines also offer a fair amount of room for expansion; in that respect, the 7200 represents an especially dramatic improvement over the 6100 and its single short card slot and two SIMM sockets. Having the CPU on a replaceable daughtercard adds a new dimension of flexibility and protection against obsolescence to the 7500 and 8500. We wish Apple had done likewise in the 7200 models.

On the other hand, the industrial design of the 7200 and 7500 deserves special commendation, but in this area Apple continues to make higher-end buyers suffer with its awkward minitower design.

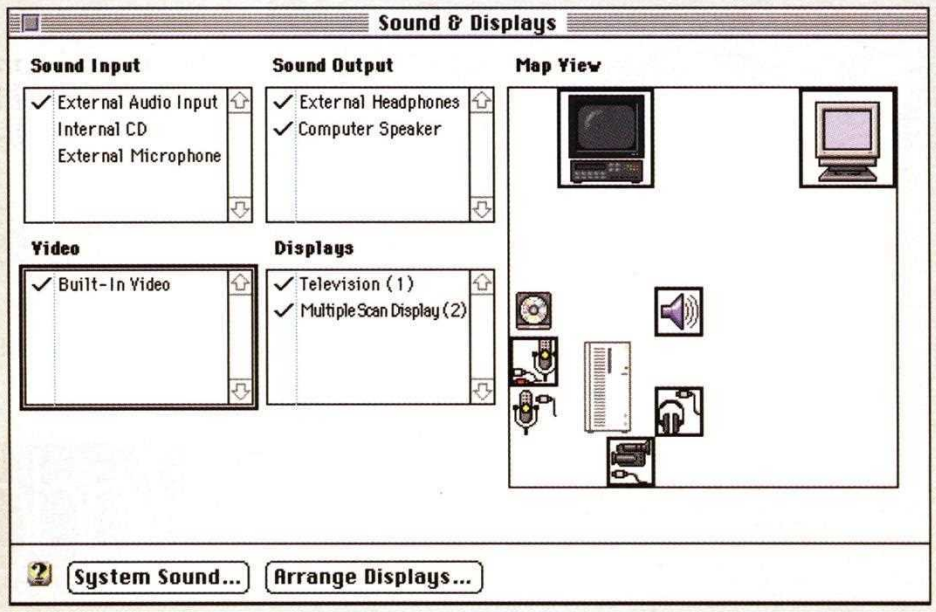
(Personally, we had planned to upgrade an 8100 to an 8500, but having had to dismantle the 8500 several times in the course of testing, we're thinking seriously of switching to a 7500 — or waiting for Power Computing Corp. to deliver an 8500-like board in a more user-friendly box.) □

Looking inside the 7200/7500


PCI slots (3)
CPU daughterboard
Unused (8500's video-out circuitry located here)
VRAM DIMM slots
Hinge for pivoting drives and power supply out of the way to provide access to logic board
PowerPC processor (with heat sink)
Level 2 cache slot
Speaker
DRAM DIMM slots
DRAM DIMM slots

NEVIN BERGER

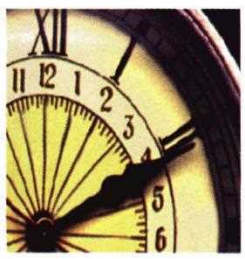
THIS IS PROGRESS?



System 7.5.2 includes Sound & Displays, a new utility intended to provide a single point of access and a consistent user interface for all audio and video configuration options. Does it actually simplify system setup? Judge for yourself — all we can say is that it took three ordinarily savvy MacWEEK staffers almost 10 minutes to figure out how to change the monitor color depth.

Are you backing up or going nowhere?

You have good intentions. You drag your important files to a disk or server. But just imagine you need to restore everything right now. Ouch! Reassembling your hard disk would be like trying to put together the VCR your five-year old took apart.



To save time and space, we back up only what's new and different.

1. *Dragging makes backing up a real pain.* There's just too much to remember. Which files did you change? What's new? When did you back up last?

Retrospect® is the better way. It always knows when to back up and what's changed. And it's fast, automated, and painless. You can find a file in seconds. Or restore an entire hard disk in minutes – same as it ever was.

Ever try to restore an important file that's been dragged to a mountain of floppies? Good luck.

Nothing's as faithful as Retrospect. We even back up your preferences. So if disaster strikes you won't roll over and play dead.

2. *Backing up the right way is actually faster and easier.* Retrospect gives you complete backup that saves time and backup media. Not to mention frustration.

3. *It's not a matter of if disaster strikes. It's when.* It'll happen to half of you this year. Fires, five-year olds, disk failures, a slip of a finger. Retrospect is simply your best insurance policy. Don't wait until it's after the fact to discover that the other guys' recovery tools won't bring back what's gone.

4. *Retrospect teams up with tape or cartridges.* It's no wonder Retrospect's bundled with just about every Macintosh tape drive sold. It's no slouch with SyQuest, MO, or Zip drives either – put them together with Retrospect and you've got a powerful backup machine.

5. *All backup software's not the same.* Retrospect's the most trusted and recommended backup software in the business. It has the awards. The reviews. The customers. Plus key features those other programs don't have – compression, encryption, comprehensive scheduling, and support for practically every SCSI drive in the universe.

BACKUP BY DANTZ
RETROSPECT

Get Retrospect free with the best backup drives. Look for this mark of quality.

You want more proof? Give us a call: 800-95-BACKUP. We'll fax back 10 more reasons Retrospect's the best way to save your data. Your work is worth it.

dantz® *To go forward, you must backup.*

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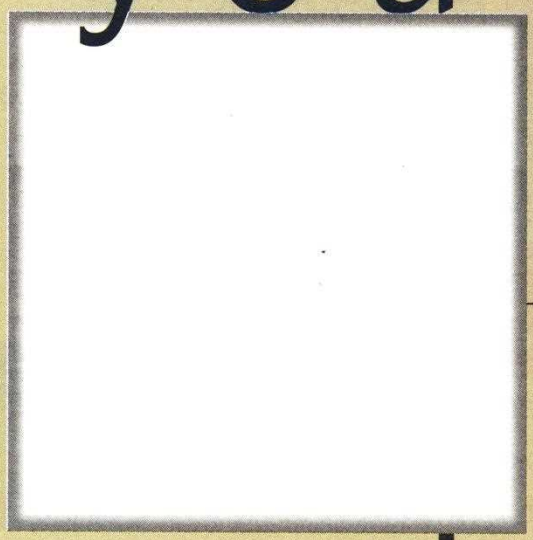
Are you in here or out there?

in here you work miracles



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In here

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And Microsoft® Office

Become one.

YOU ARE AN IDEA FACTORY

You assemble your thoughts

Effortlessly.

You drag

Words tables

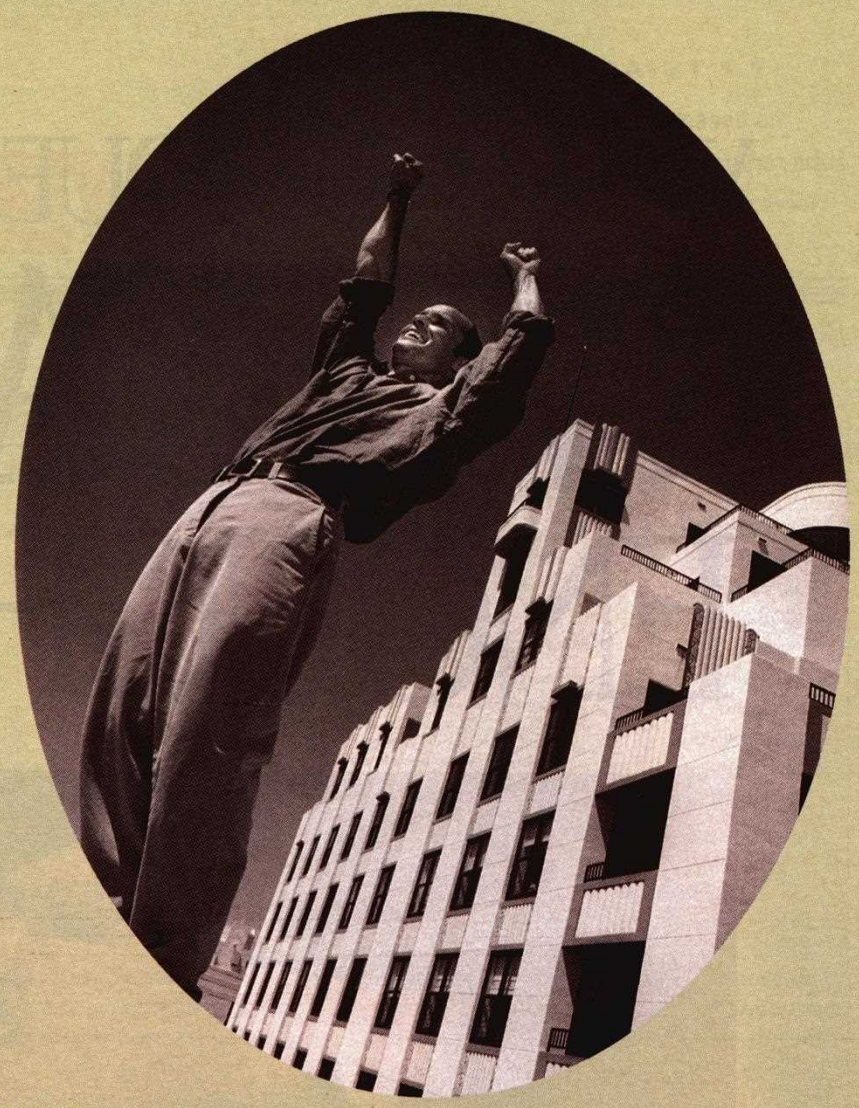
Charts graphics

From one program

And drop them

Into another

Instantly.



IDEAS BEGIN TO FORM

You run

Microsoft Excel calculations

In your Word document.

You turn your Word document

Into a PowerPoint®

presentation.

You see everything

Come together.

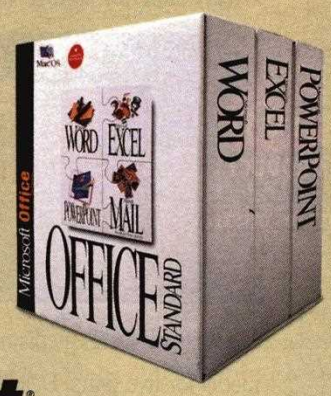
Seamlessly.

GO AHEAD

Make something.

Make anything.

This is you. Working.



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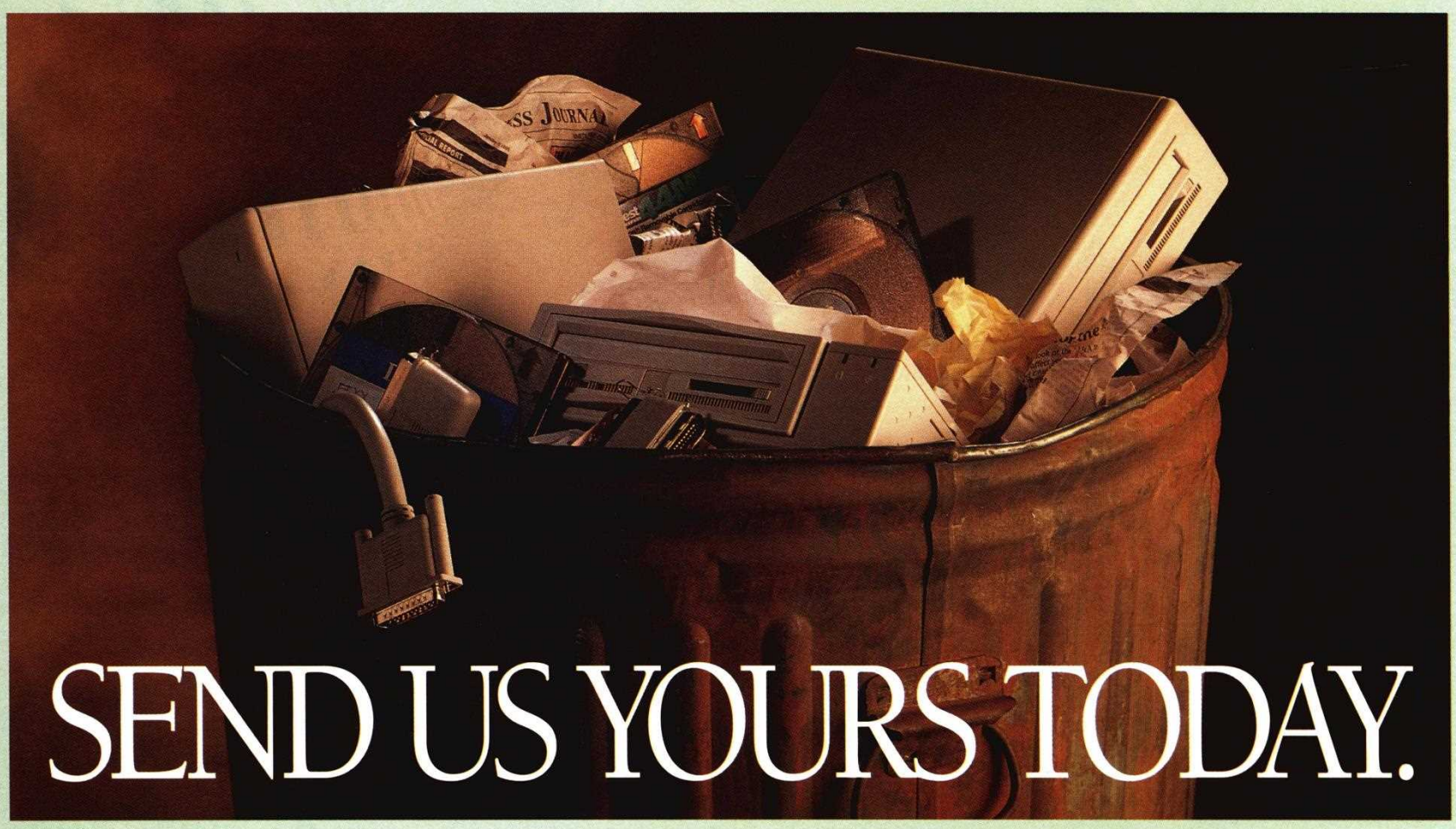

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$100 trade UP

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Plus, only Deltis MO comes with time-saving, cross-platform software for either Mac, pre-press, DOS or Windows. And besides being the fastest MO on the market, its new low price will make it move even faster.

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MEDIAPAINT 1.1

Strata Inc. has released an update to MediaPaint that adds support for the 604 processor; strata3d@aol.com.

FrameMaker 5.0 takes long view on on-line publishing

By Kathleen Tinkel

Publishing app adds new text-handling features; HTML translation needs work.

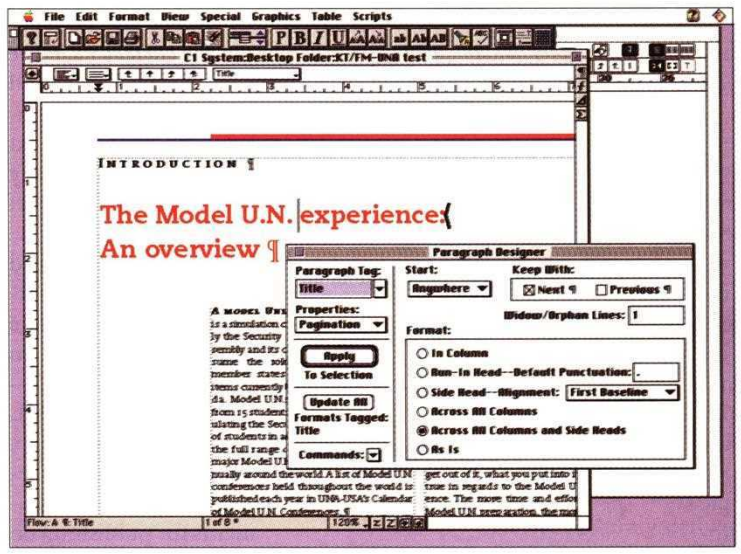
With Release 5.0, Frame Technology Corp. is attempting to reposition FrameMaker slightly to embrace on-line publishing and distribution while sustaining its market position as the most logical tool for producing highly structured books and other long documents.

Any evaluation of FrameMaker for the Macintosh must reflect the two distinct groups that use it: The first includes those who regularly work on long technical documents or need great cross-platform compatibility and do most (or all) of this work in FrameMaker. The second includes those who produce diverse publications and tend to use QuarkXPress or Adobe PageMaker, reserving FrameMaker for jobs that call for many tables, footnotes, cross-references or other elements that cannot be easily automated in the page-layout programs.

The $895 program's new capabilities include incorporating multiple-column straddles in paragraph formats, enabling graphics to repel text automatically, importing text that retains dynamic links to its source files and merging graphic primitives into more-complex objects. These are useful additions to FrameMaker's already formidable collection of production tools.

This release also adds a couple of features aimed at electronic publishers: a special print-to-disk format tailored for generating Adobe Acrobat files (FrameMaker now supports Acrobat 2.0) and automatic conversion of FrameMaker documents to HTML (Hypertext Markup Language) by means of a third-party plug-in.

The program ships on 16 floppy disks. Frame said it is shipping a CD-ROM version in mid-August that includes a copy of FrameReader, international dictionaries and an on-line catalog.



The most useful new feature in Frame Technology's FrameMaker 5 is column straddles. You can set specific text formats to straddle multiple columns in the Paragraph Designer's Pagination dialog.

Text handling

The most useful new feature in FrameMaker 5 is column straddles, which allow headlines, footnotes, tables and other page elements to span multiple columns, including sideheads, even within tables. The software automatically balances columns above the straddle. For the first time (among Mac layout programs, at any rate), it is possible to automate this common layout feature by building it into paragraph formats so it can be applied via text tags or scripting.

The capability to wrap text around a graphic — either its rectangular bounding box or the contour of the shape — is also useful. FrameMaker's feature is limited in that it doesn't let you make manual adjustments to the standoff. The suggested work-around, to add a second invisible object of roughly the desired shape, is at best a bit of a kludge. Worse, while FrameMaker seems to do a good job of finding the contours of its own graphics, it fails with some imported EPS files (one of the three we tested).

A third text-related enhancement to FrameMaker is dynamic linking of imported text with its source, a feature that users have long asked for and one that FrameMaker has long offered for imported graphics. When first released, FrameMaker's assumption was that text would be entered directly from the keyboard; an earlier revision permitted both ASCII and formatted text to be imported from some other applications into a FrameMaker document. Live updating is a good enhancement for complex publications whose text originates in multiple sources on a network. Mac users can also use publish and subscribe, but FrameMaker's Import Text By Reference feature is preferable for files that may need to cross platforms at some point.

See FrameMaker, next page

score card

FrameMaker 5.0

Frame Technology Corp.
List price: $895*
Overall value ◆◆◆◆

FrameMaker 5.0 is a capable and stable program that merits high marks for its general performance and rich functionality. For the vocal minority that includes many of its Macintosh users, however, FrameMaker drops the ball in some respects, still failing after three revisions to address weaknesses in typography, color and graphics that make the program difficult to use for high-quality commercial book publishing. FrameMaker's strength across platforms makes the program harder to use on the Mac, as many of its procedures and shortcuts conflict with Mac standards. Unfortunately, the new plug-in that automatically converts FrameMaker documents to HTML works only on some Macs, but a fix was being prepared at press time. Both documentation and technical support are well done.

Performance ◆◆◆◆
Features ◆◆◆
Ease of use ◆◆◆
Documentation/support ◆◆◆◆

**Upgrades from previous versions, $225.*

Key ◆◆◆◆◆ *Excellent* ◆◆◆◆ *Very good* ◆◆◆ *Good* ◆◆ *Fair* ◆ *Unsatisfactory*

Kodak's Digital Camera 40 eyes Apple QuickTake users

By Dale Coleman

Produces higher-quality images than QuickTake 100, but image downloading is too slow.

The arrival of Eastman Kodak Co.'s Digital Camera 40 is an important development in the drive to legitimize low-end digital still photography. It is also Kodak's take on how to improve the Apple QuickTake 100, the point-and-shoot camera that was jointly developed by the two companies.

Apple, meanwhile, has also come out with its own second-generation incarnation of the QuickTake 100 — the QuickTake 150 (see story, Page 73).

The resemblance of both cameras to the QuickTake 100 is very strong, although the $995 DC 40 has design features meant to make it more attractive for serious users than Apple's latest effort.

The DC 40 can store up to 48 high-quality 756-by-504-pixel images or 99 standard-quality 378-by-256-pixel images in its 4 Mbytes of RAM.

The camera has a built-in flash and a standard lens that can focus on objects as close as four feet. Although it does not ship with a close-up lens solution, it can accept a variety of common lenses.

The DC 40 is both Macintosh- and Windows-ready. It ships with serial cables for both platforms and includes Macintosh and Windows versions of PictureWorks

See Kodak, Page 73

FrameMaker

From previous page

FrameMaker includes a set of drawing tools, including not only lines, arrows, circles and squares, but tools for drawing polygons and arcs.

Graphics

One of FrameMaker's new graphics features is a boon for nonartists faced with creating a simple line drawing in a FrameMaker document. It allows you to assemble FrameMaker's graphic primitives and merge them into more-complex objects that may include a variety of line weights, color and fill patterns. This isn't suited to anything very complicated, but it is more than adequate for such things as pie charts and other simple diagrams. In fact, for such simple drawings it is less cumbersome and more accurate than the methods normally used in sophisticated drawing programs.

> FrameMaker 5.0 is classy, in a sturdy way. If we were talking about horses, it would be a Clydesdale, not a thoroughbred.

FrameMaker offers complex hypertext authoring functions, and many users have already produced read-only hypertext documents that work with the proprietary FrameViewer (which can be distributed only to users within a FrameMaker workgroup). This release of the program promises to extend FrameMaker's hypertext to other publishing venues for electronic publishing via the World-Wide Web and as Adobe Acrobat Portable Document Format (PDF) files. As implemented in FrameMaker 5, however, neither of these functions is very powerful.

My generation

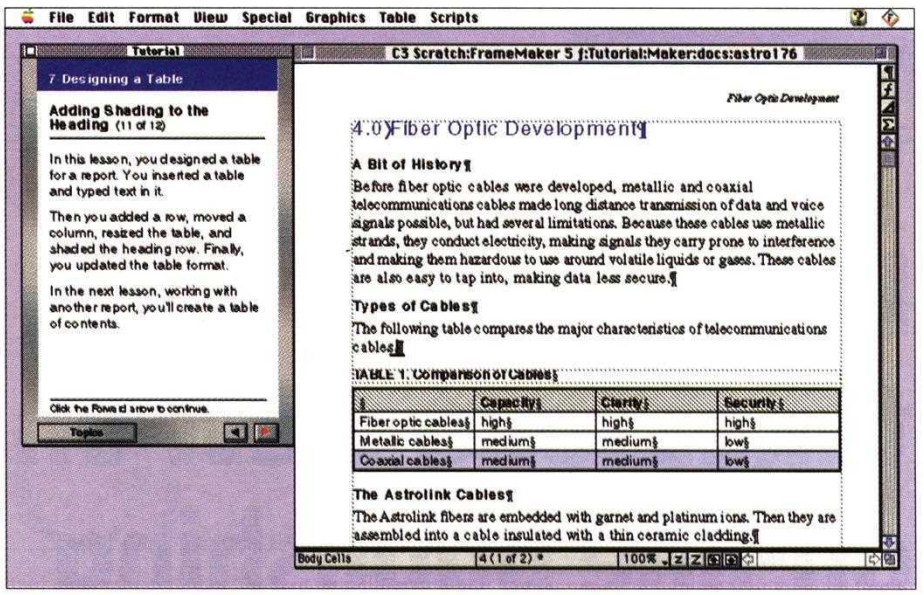
FrameMaker 5 automates generation of PostScript disk files that are ready to be processed by Acrobat's Distiller utility into PDFs. Without much need for the user to intervene, FrameMaker translates its hypertext links and markers within files and across multiple documents into a format Acrobat can use. You still need to understand Acrobat fairly well to make use of this function, however, and it may be necessary to modify the source document to tailor the PDFs to the viewing or output environment. There have also been complaints from some users that cross-references in indexes do not translate properly (they refer you to the correct PDF file but not to the referenced text). We would expect this feature to be strengthened considerably with the next release (when Frame Technology will be part of Adobe).

Frame has enhanced FrameMaker's hypertext functions to make them work with an HTML translator — WebWorks HTML from Quadralay Corp. — to ease creation or repurposing of documents for publishing on the Web with links, cross-references and other markers intact. A "lite" version of WebWorks HTML is included with FrameMaker 5, but it won't run on some 680x0 Macs (including a Quadra 700 with 20 Mbytes of RAM) and works with Power Macs only if FrameMaker can be allocated 13.5 Mbytes of RAM. Quadralay promised to have a fixed version of WebWorks HTML Lite that works on all Macs by mid-August; it will be posted on Frame, Quadralay and other on-line sites, free for the downloading.

On a lighter note

When it does work, the Lite utility doesn't convert any graphics — although it will reference linked GIF (Graphic Interchange Format) files — and works only with single documents. A commercial version that converts all graphics and handles hypertext linking between documents is expected to be available for the Mac by the end of the year; it will list for $895.

Frame's own hypertext files can be read but not edited with the free (for nonprofit use) FrameReader or the more capable FrameViewer ($29 for a single-user license).


File Edit Format View Special Graphics Table Scripts
Tutorial
7 Designing a Table
Adding Shading to the Heading (11 of 12)
In this lesson, you designed a table for a report. You inserted a table and typed text in it.
Then you added a row, moved a column, resized the table, and shaded the heading row. Finally, you updated the table format.
In the next lesson, working with another report, you'll create a table of contents.
Click the Forward arrow to continue.
C3 Scratch:FrameMaker 5 f:Tutorial:Maker:docs:astro176
Fiber Optic Development
4.0 Fiber Optic Development
A Bit of History
Before fiber optic cables were developed, metallic and coaxial telecommunications cables made long distance transmission of data and voice signals possible, but had several limitations. Because these cables use metallic strands, they conduct electricity, making signals they carry prone to interference and making them hazardous to use around volatile liquids or gases. These cables are also easy to tap into, making data less secure.
Types of Cables
The following table compares the major characteristics of telecommunications cables.
TABLE 1. Comparison of Cables
Capacity
Clarity
Security
Fiber optic cables high high high
Metallic cables medium medium low
Coaxial cables medium medium low
The Astrolink Cables
The Astrolink fibers are embedded with garnet and platinum ions. Then they are assembled into a cable insulated with a thin ceramic cladding.
Body Cells
4 (1 of 2) *
100%

FrameMaker's useful interactive on-line tutorial helps clarify some of the program's formatting features, by walking you through a number of practice exercises.

On a Mac Quadra 700 with 20 Mbytes of RAM (5 Mbytes of it allocated to FrameMaker), a 20-inch 24-bit monitor and a Thunder/24 video accelerator card, some FrameMaker operations are noticeably slow. For example, importing or moving graphics can take several seconds. Text flow is reasonably fast, however, and overall the program performs well enough. It runs native on a Power Mac.

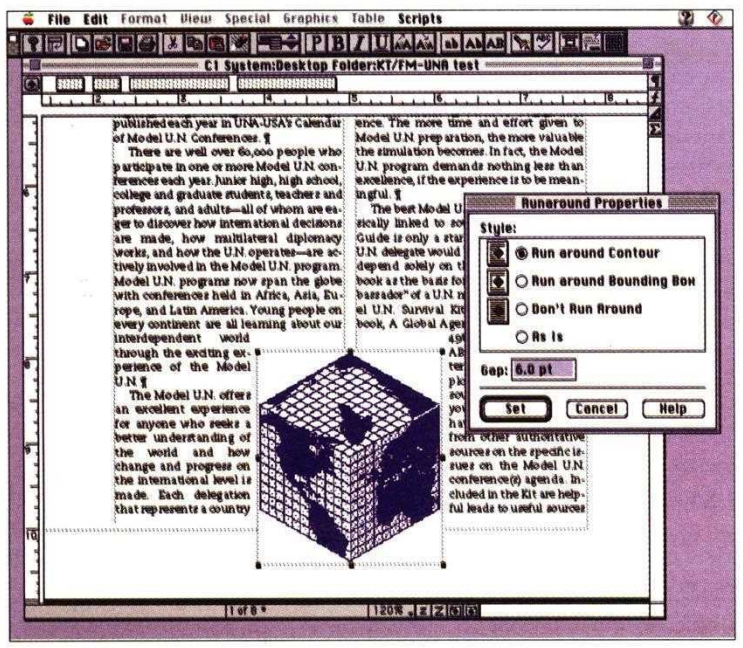
Problems

Our review of FrameMaker 4 (see MacWEEK, Nov. 8, 1993, Page 31) complained that the program couldn't generate endnotes or split long footnotes over two or more pages. This is still true; you can generate cross-referenced endnotes manually, but you must maintain the links yourself.

We also complained about the "quirky and nonstandard" interface (including some nomenclature and keyboard shortcuts). This also remains true, particularly on the Mac. This is a consequence of cross-platform compatibility (the software works about the same way on Unix and Windows as on the Mac) but is a continuing obstacle for Mac users.

In our review of FrameMaker 3 we complained about poor (or quirky) support for typography. These problems also remain today. You still must accept automatic ligature replacement if you elect to use pair kerning, and the controls required for good composition are scattered throughout several dialogs. Tracking, manual kerning and range kerning are all controlled by the Spread function. Character space adjustments are controlled by an on-off toggle. Additional typeface weights or styles (beyond the basic four) are buried three dialogs down; you cannot select a face such as Imago Extra Bold from the obvious menus.

FrameMaker has come a long way in its handling of color output, but problems remain. The program's PostScript does not comply with Adobe Document Structuring Conventions (ADSC), which means that service bureau programs such as Adobe TrapWise cannot be used to trap and separate FrameMaker's color files. This is a serious barrier for using FrameMaker in four-color commerical publishing.



FrameMaker does a good job of wrapping text around its own graphics. With some EPS files, selecting Run around Contour didn't work, however, and the text was repelled from the graphic's bounding box.

Documentation and support

The printed manual is well done and well indexed, even cross-referencing industry terms with FrameMaker's own nonstandard terminology. Special functions — references for using FrameMaker tagging languages, AppleScript and filters, for example — are covered in on-line help files. There is also a context-sensitive help function and an interactive on-line tutorial.

Registered users receive 30 days of free technical support. We waited about eight minutes in a voice mail queue to get through to the phone registration desk and another five to reach technical support. Both representatives that we spoke with were knowledgeable, unrushed and helpful.

Support is also provided on CompuServe's DTP Vendor A Forum. The Frame representative responds quickly (within a few hours during the work week), and users have the added benefit of advice from other, more experienced users.

Conclusions

For those who work with large files, need footnotes or have to include many tables in publications of any size, FrameMaker 5 is still the only sensible choice. That recommendation is not made grudgingly — FrameMaker is classy, in a sturdy way (if we were talking about horses, it would be a Clydesdale, not a thoroughbred). The program is complex and hard to learn but largely because it is designed to perform complex tasks.

FrameMaker 5 has its flaws — the company should strengthen its new electronic-publishing features before crowing about them. Besides problems introduced with this release, it is troubling that several of the shortcomings identified in versions 3 and 4 remain unresolved. But overall this is still a solid program.

Frame Technology Corp. of San Jose, Calif., can be reached at (408) 975-6000 or (800) 843-7263; fax (408) 975-6600; salesinfo@frame.com. □

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the fastest, most powerful

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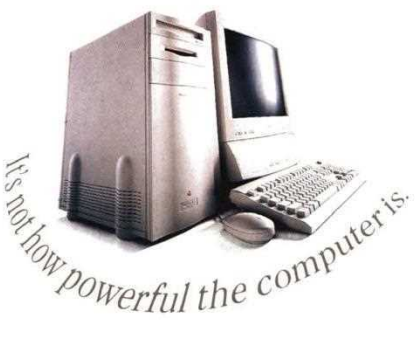
Yet it still all boils *down*

to one th*ing*.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It's how powerful the *computer* makes you.

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Communicators.
Accountants.
You.

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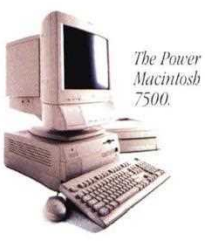

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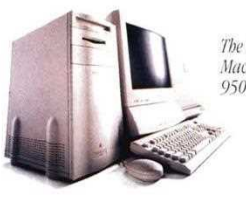

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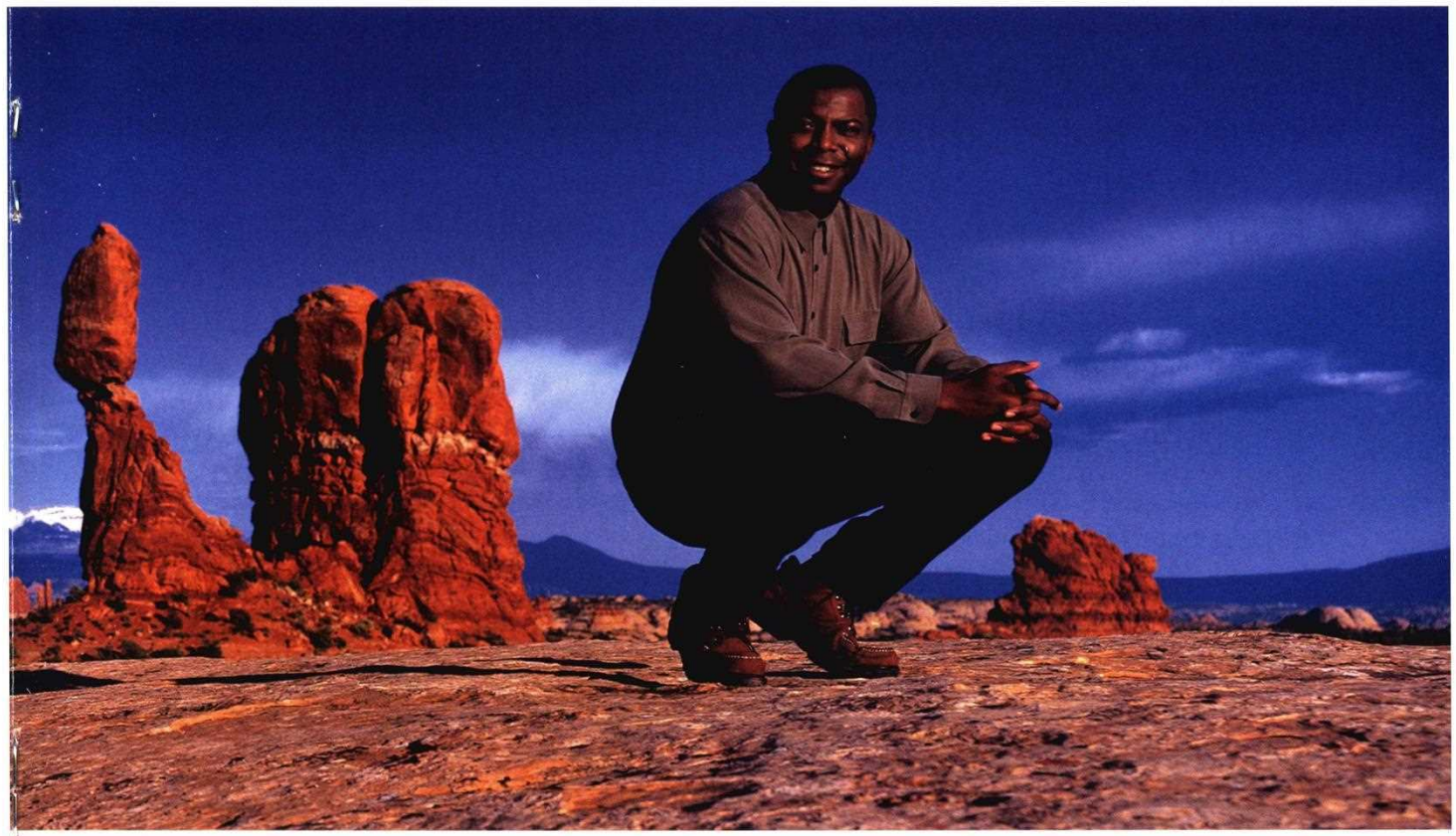
You.



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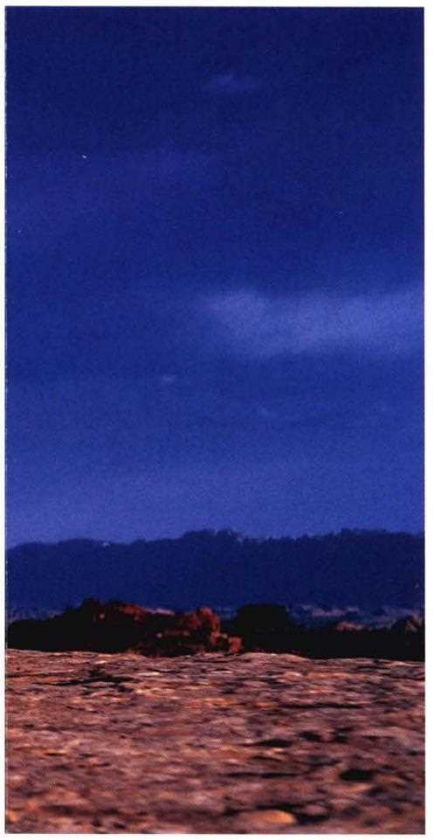
The Power Macintosh 8500.



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After all, it's really not about how powerful the computer is. It's about how powerful the computer makes you. The power to turn inspiration into solutions. Ideas into products. Vision into reality. The power to be your best.™

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120 or 132 MHz PowerPC 604 RISC processor
Processor upgradable via daughterboard
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The Power Macintosh 8500.

120 MHz PowerPC 604 RISC processor
Processor upgradable via daughterboard
3 PCI slots
3 expansion bays
8 DRAM sockets
16MB to 512MB of DRAM
1GB or 2GB Fast SCSI hard disk
Built-in video-in/video-out capabilities up to 30 frames per second
Built-in 10Base-T and AAUI Ethernet

The Power Macintosh 7200 and 7500.

3 PCI slots
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7500

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ED CALDWELL

Eastman Kodak's new DC 40 is a low-end digital camera that can store up to 48 high-resolution (756-by-504-pixel) images. The camera is bundled with PictureWorks' PhotoEnhancer image-editing software.

Kodak

From Page 71

Technology Inc.'s PhotoEnhancer 1.5. This image touch-up program, designed for enhancing photos generated by low-end digital cameras, serves double duty as the DC 40's image browser and downloading tool.

Get a grip

Some changes indicate that Kodak learned more than Apple from the initial QuickTake outing. The DC 40's grip strap, for example, is integrated into the case itself, unlike the QuickTake 150, and its design encourages the user to hold the camera properly.

The four AA lithium batteries that ship with the camera are good for up to 500 pictures (assuming that about half of those shots require the flash). Put simply, the black-on-black DC 40 looks and feels more like a real camera than Apple's offering, and that is as one would expect, given Kodak's long experience in the market. Unfortunately, some design decisions indicate less human interface experience than one might hope.

The LCD status screen, which contains icons for controlling the flash, exposure, battery and the like, is larger than the QuickTake 150's and contains more icons, but they are less intuitive than Apple's, although they are serviceable once you learn them. The same is true for the button scheme you use to control those icons.

When it is time to download your images, you connect the DC 40 to your Mac and mount it on your desktop via PhotoEnhancer's Camera menu, which also has commands for controlling the camera with the keyboard and mouse.

score card

Kodak Digital Camera 40

Eastman Kodak Co.
Overall value ♦♦♦ **List price: $995**

Kodak's DC 40, like Apple's new QuickTake 150, is a slightly upscale variant of the QuickTake 100, a Kodak-Apple joint-development product. It improves on the original with higher resolution (756-by-504-pixel images); higher capacity (48 high-resolution pictures); longer battery life; and a more flexible design, including the capability to accommodate standard-sized threaded lenses. Both Macintosh and Windows versions of PictureWorks' PhotoEnhancer image-editing and downloading software are included. The camera has a focus range of four feet or more, an f/2.8-to-f/16 aperture range, shutter speeds from 1/30th to 1/175th of a second and narrow-range flash. The DC 40, overall, is an attractive tool that generates sharp 24-bit images, but it is seriously marred by very slow image transfers from the camera to the Macintosh.

Performance ♦♦
Features ♦♦♦♦
Configuration ♦♦♦
Compatibility ♦♦♦♦♦
Documentation/support ♦♦♦♦

As a tool to manipulate images created with low-end digital cameras, PhotoEnhancer is a success. We know of no other program that makes it as easy to correct focus, exposure and other common mistakes. It offers a wealth of "enhance by example" features that make it easy for even the greenest photographer to get presentable results with the DC 40. Images can be exported as PICT, TIFF or EPS files.

Two features, however, are noticeable by their absence in PhotoEnhancer's feature list: Adobe Photoshop plug-in compatibility and a cataloging function beyond its Slide Table feature, which is limited to displaying thumbnails of the contents of the root level of only a single folder.

Every picture tells a story

Our quibbles so far are minor — after all, the important thing is the output, and the DC 40 certainly delivers on that score. In our tests, the larger DC 40 images were almost always as good as and sometimes noticeably clearer and sharper than the same shots taken with the QuickTake 150.

If you are used to QuickTake's capacity limit of 16 high-quality images, you will feel liberated by the DC 40's amazing capacity of 48 high-quality images, a feature made possible both by the camera's generous 4-Mbyte RAM endowment and Kodak's compression algorithm.

That inflated sense of liberation will wilt immediately when you endure your first

See Kodak, next page

Apple QuickTake 150 develops better image

Overall value ♦♦♦♦

After clearing a path with its QuickTake 100 digital camera last year, Apple has focused on performance and quality improvements. The QuickTake 150 sells for an ApplePrice of $739, $10 less than the 100.

We've used both QuickTakes extensively and quickly grew to appreciate the improvements Apple made in the new model. The 150 looks no different than the older model; the important changes are all under the hood. A more effective compression scheme has allowed the company to double the number of high-quality pictures to 16 and to double the resolution of the standard mode images to 640 by 480 pixels — and all this was done in the same 1-Mbyte helping of flash memory available in the QuickTake 100 (see MacWEEK, April 11, 1994, Page 59).

Apple has also overhauled the software that is bundled with the Mac version of the QuickTake 150, replacing the QuickTake application with Apple's own PhotoFlash 2.0, a more robust product. Major PhotoFlash 2 features include good AppleScript support, compatibility with Adobe Photoshop plug-ins and a decent image-file cataloging feature. (On the Windows side, the 150 retains the QuickTake application as its bundled image editor/browser.)

Close-up solution

The QuickTake 100 made low-end digital photography respectable, but Apple made no provision for taking decent close-ups. The 150 comes with a serviceable snap-on adapter that includes both an inexpensive lens that also adjusts for parallax error correction and a lens to diffuse the flash more effectively for close-up work. This works well enough, although the range is limited to 10 to 14 inches from the subject.

Kaidan offers a QuickTake close-up solution that significantly betters Apple's plastic adapter. The $134.95 CloseTake professional system consists of a threaded lens adapter and three close-up lenses: a +2 diopter lens for 18 to 48 inches, a +3 diopter lens for 9 to 189 inches and a +4 diopter lens for 4 to 9 inches. You can also combine lenses to cover the entire 2-inch-to-4-feet range from your QuickTake subject.

Equipping your QuickTake with the Kaidan lenses dramatically changes its personality. You can take photographs with the QuickTake-CloseTake combination that will surprise those who are used to thinking of low-end digital photography in terms of the limitations of the QuickTake alone.

We were also impressed with the $89.95 Kaidan WideTake lens system, which includes a high-quality wide-angle lens and a 52mm screw-on filter mount that accepts standard photographic filters. It expands the QuickTake's standard field of view to 75 percent. The WideTake lens system might not activate your latent Ansel Adams-style talents, but it will make even mundane real estate photos more compelling.

ED CALDWELL

Apple's QuickTake 150 offers twice the resolution and storage capacity of its first-generation digital camera, the QuickTake 100.

Kaidan has other QuickTake products in the works. Along with a flash accessory called QuickFlash, the company intends to announce a panning system to enhance the QuickTake cameras' suitability for QuickTime VR use.

Conclusions

With the QuickTake 150, the Apple-Kodak child has reached puberty, if not adulthood. The 150 improvements make it more functional and desirable than its predecessor — no small trick considering that the price hasn't increased. You'll do fine with the 150's snap-on adapter, but we think the Kaidan accessories add significantly to the QuickTake 150's suitability for a wide range of uses. Taken together, these products from Apple and one small third-party developer indicate that the low-end of the digital photography market will continue to be the scene of a great deal of innovation.

Apple can be reached at (408) 996-1010; http://www.info.apple.com.

Kaidan of Feasterville, Pa., can be reached at (215) 364-1778; fax (215) 322-4186; kaidan@aol.com.

— By Dale Coleman

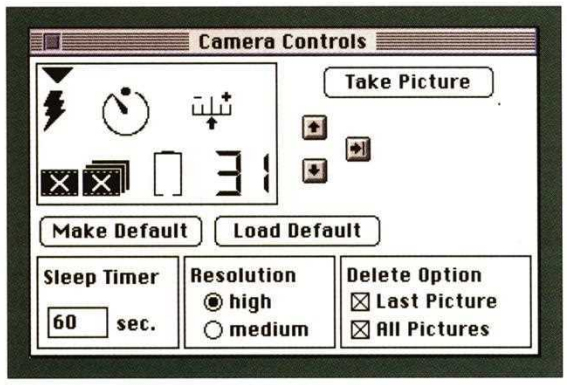
Kodak

From previous page

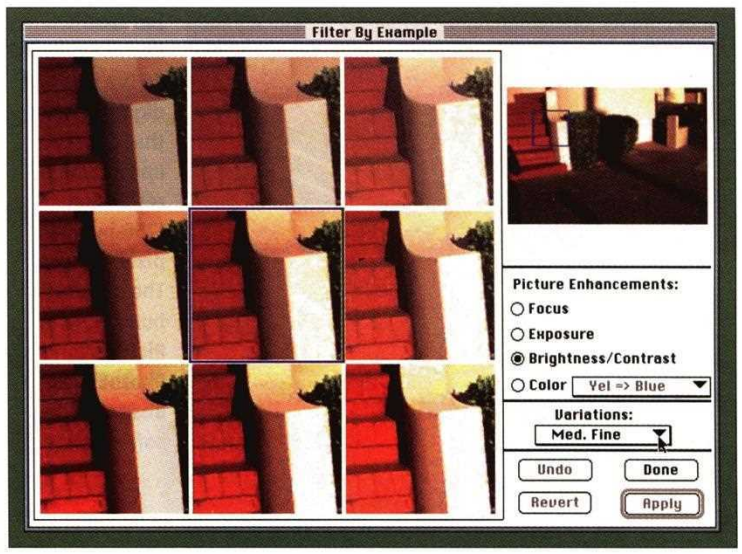
session downloading images to your Mac. Because each of those 48 high-quality 756-by-504-pixel images is about 1 Mbyte, it takes about one minute to travel the narrow path down the Macintosh serial port. By comparison, the QuickTake 150 accomplishes the same task in about 2.5 seconds per high-quality image. So when it's time to download, you've got about 45 minutes to ponder the foolishness of indulging your desire to indiscriminately take advantage of every photo opportunity along your way, regardless of its suitability. And if you're using the DC 40 to take ID photographs or some other similar use, you'll have time to consider investing in a second DC 40 to use while the first is downloading images.

The root of the problem of the leisurely downloads is the 1-Mbyte files. With both the DC 40 and the QuickTake 150, images are compressed and stored in internal memory. With the QuickTake, images remain compressed until you open them with a graphics application. But the DC 40 approach is to decompress the files as they are to be downloaded. The result is 40-minute-plus downloads. And let us not forget the hard disk storage space necessary to store multiple 1-Mbyte files.

A Kodak representative told us that focus groups chose the highest-quality images over all other considerations and that the DC 40 was designed with vertical applications, primarily based on Pentium machines, in mind; the intensity of interest, particularly from Mac users, was unanticipated. Downloading DC 40 images over a serial port on Pentium machines is much faster than on Macs, Kodak said. Our tests bore that out: It took us about 14 minutes to download 40 images from a Pentium machine, compared with more than 45 minutes on a Mac. Having admitted its miscalculation, Kodak is now working with PictureWorks to devise a solution.



PictureWorks' PhotoEnhancer Camera Controls window mimics the Kodak DC 40's LCD display. It provides controls for image resolution and check boxes for delete options.



The PhotoEnhancer application bundled with the Kodak Digital Camera 40 makes it possible for even casual photographers to achieve good results. The By Example dialog can preview possible adjustments to focus, exposure, color, or brightness and contrast (shown here).

Conclusions

If you can tolerate the download times the DC 40 requires or if you will mostly be downloading to a Pentium machine, the DC 40 is a good bargain.

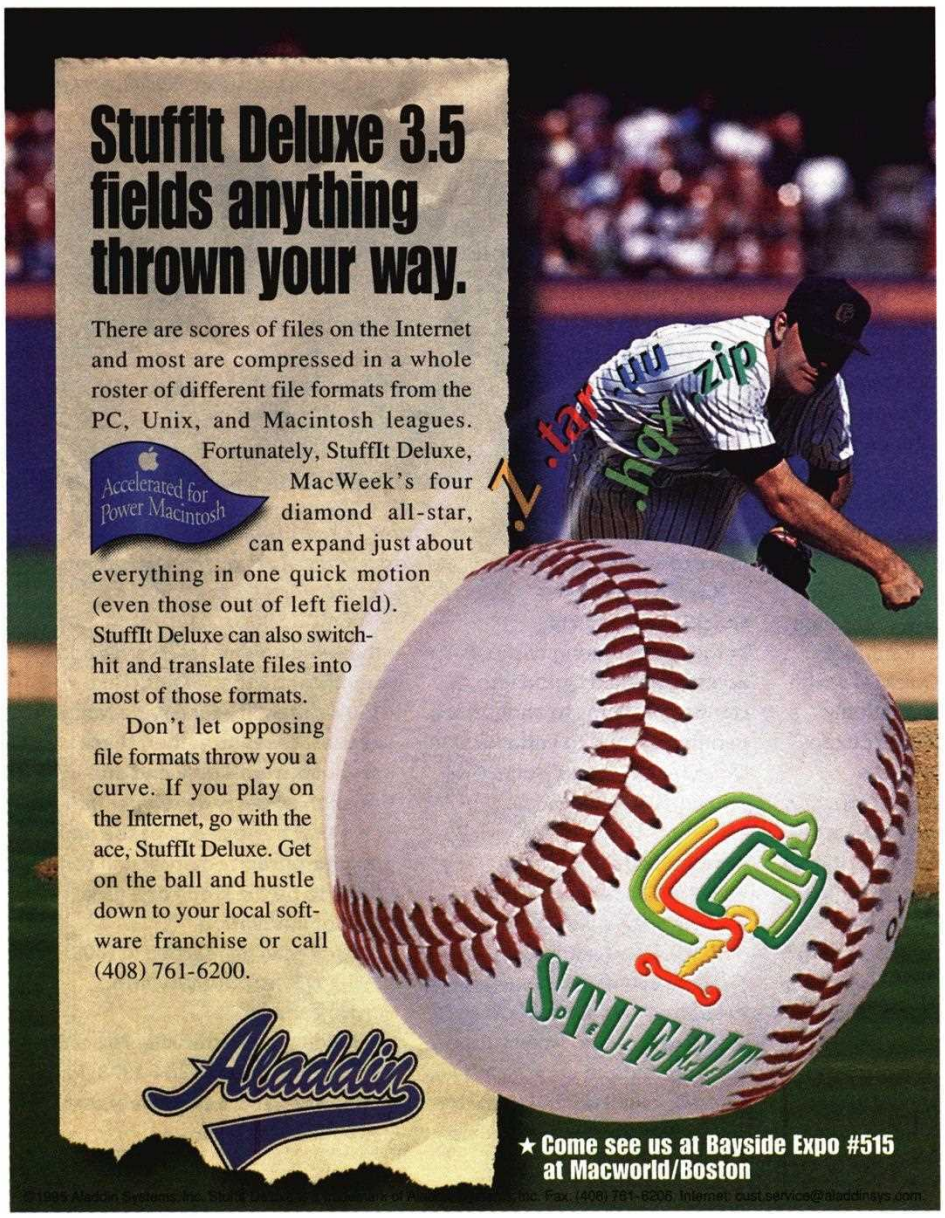
Those who plan to use the DC 40 on both Windows and the Mac won't have to spend nearly $100 on a special connection kit as do QuickTake users. And for many, the capacity for 48 high-quality images will make this camera an immensely more flexible tool than the QuickTake 150 with its 16-image limit.

Of course, paying almost $1,000 for a camera whose output can be equaled by traditional cameras you can buy for $40 or less seems like a good deal when you factor in the time and money saved by avoiding film purchases, development costs and scanning expenses.

If the documents you create include images of the class generated by low-end digital still cameras, the new generation of cameras based on the efforts of the Kodak-Apple QuickTake collaboration is a tremendous value that can save you and your organization time and money each production cycle.

The DC 40 is the better dressed of the pair, but until the Mac download time is reduced, we prefer the QuickTake 150 for most uses.

Eastman Kodak Co. of Rochester, N.Y., can be reached at (716) 724-4000 or (800) 235-6325; http://www.kodak.com. □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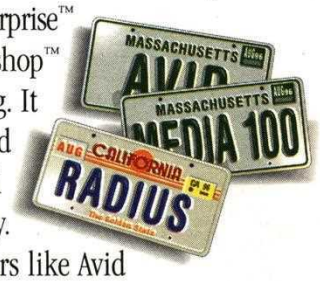

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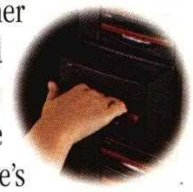

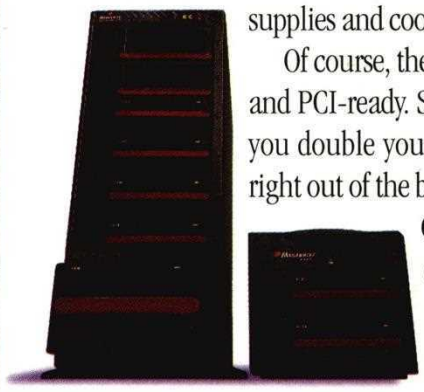

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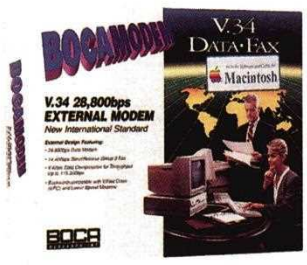

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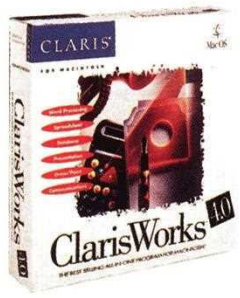

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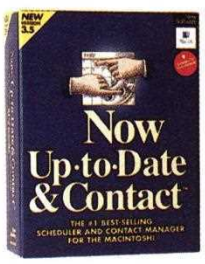

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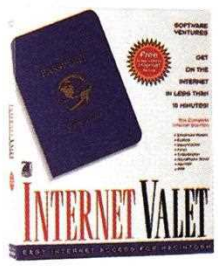

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COMPARISON

Three fax solutions vie for place on networks

By Jonathan A. Oski

Biscom, 4-Sight and SoftArc let Mac managers integrate fax functions into their networks.

Macintosh managers looking for a way to incorporate fax capabilities into their networks can now choose a much more efficient solution than installing a fax modem and phone line at each user's workstation. Three client-server fax products that we looked at — Biscom Inc.'s $495 Faxcom for Macintosh 2.0, SoftArc Inc.'s $495 FirstClass Fax Gateway 2.0. and 4-Sight L.C.'s $595 4-Sight Fax 3.0 — let users send faxes from their desktop Macs through a central server.

4-Sight Fax and Faxcom for Macintosh are complete, scalable fax server systems that let you fax directly from almost any Mac application and can work with popular e-mail systems such as CE Software Inc.'s QuickMail, Lotus Development Corp.'s cc:Mail and Microsoft Mail. They can also be configured, at an additional cost, to support inbound routing of received faxes. Both can expand from single-line to multiline configurations depending on your fax volume. SoftArc's FirstClass Fax Gateway, a companion product to its popular FirstClass BBS and e-mail system (see MacWEEK, May 29, Page 28), operates strictly as a gateway. FirstClass users can send faxes with PICT or text attachments through the gateway, but it has no inbound fax capabilities.

Installation

The hardware requirements for these fax solutions vary widely, though all three require a dedicated Mac as a server (see story, Page 80). We had no trouble performing any of the server installations, thanks to clear and concise documentation in all three products. All offer clients that are easy to install and configure.

If you've customized your FirstClass clients by adding forms to the setup files, you may find it tedious to add the fax forms to each client. SoftArc suggests that you use ResEdit to copy the forms from a supplied settings file to the settings files on each workstation. In most cases this should not be necessary, though, because you can simply replace the default settings file with the one included with the fax gateway.

The Biscom Faxcom server that we tested ships with the software preinstalled, so setting up the system simply involves connecting the keyboard, display and power and then turning the unit on. You must enter a few commands at the Faxcom console to set up the server for your network and phone-line configuration, but it is painless and takes no more than a few minutes.

Faxcom for Macintosh

From a user perspective, Faxcom for Macintosh works like any printer on the network. From within any Mac application, you simply select the Faxcom gateway from the Chooser when you want to send a document as a fax. (Faxcom uses the standard LaserWriter 7.2 driver.) The print dialog for the LaserWriter will appear first, followed by a cover-page dialog, where you address the fax using existing or new entries in Faxcom's address book. You can also enter any comments or other text you want to appear on the cover page.

Users can manage any faxes they have sent or received using the Manager application, which lists all the faxes sent, received or pending on the gateway. For example, you may want to change the phone number, reschedule transmission or delete a fax document from the server's queue. You also use the Manager to organize your fax address book. You can add entries manually or import them from any tab-delimited text file. You can optionally associate a specific memo with each entry that will print, along with any comments you type on the cover page.

Administrators also use the Manager application to manage the server. With this utility, you can import cover pages created with any application that can save a PICT image. The Faxcom cover page is a bit more difficult to set up than others because it uses coded fields directly in the background document; 4-Sight's more Mac-like interface lets you drag fields around to place them over a static background.

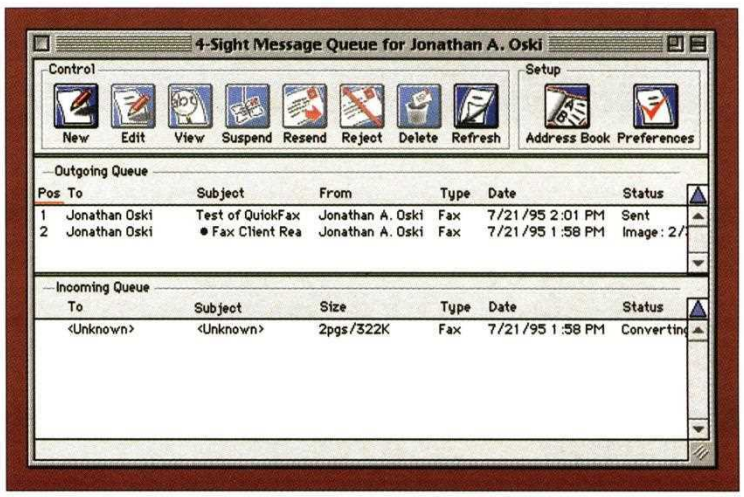
The Faxcom software, in general, could use an update. The program's main dialog suffers from fields that are too small to hold addresses and company names longer than 15 characters; it also lacks color and icons. This was OK in the late 1980s, but today most users are looking for better navigation elements, such as icon buttons, as well as color and more flexibility.

4-Sight Fax

4-Sight Fax uses an elegant interface to provide the most complete and Mac-integrated fax solution of all the products we compared. Four main components in the client software help make the product easy to use.

Like Faxcom, 4-Sight uses a Chooser device to let you select the fax gateway you want to print to. The 4-Link desk accessory is the principle interface for managing your faxes, while the Fax Switcher control panel allows you to control basic character-

See Fax, Page 80



4-Sight Fax's 4-Link desk accessory has a well-designed interface that makes it easy for users to manage all their fax activity, including opening and viewing incoming faxes and organizing their address books.

score card

Network fax servers

Three network fax servers let Mac users send faxes from their desktop without the need for separate modems or phone lines. While all three offer faxing via e-mail, two offer a more robust set of capabilities for inbound and outbound faxing.

▸ **Faxcom for Macintosh 2.0** from Biscom Inc. is a powerful component of the company's enterprisewide computer/fax product line. It has inbound routing capabilities; can be scaled to a multiline configuration with as many lines as you need; and can be integrated with your mainframe, minicomputer and Intel-standard PC LAN applications. Though powerful, the software offers less functionality than 4-Sight's and suffers from a user interface that is a bit tired, but it works well just the same.

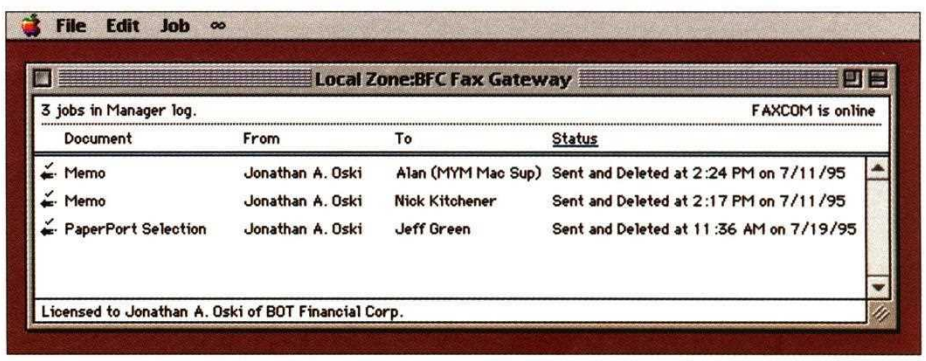
▸ **FirstClass Fax Gateway 2.0** from SoftArc Inc. is a fax gateway for the company's popular FirstClass e-mail and BBS system that lets users send messages as outgoing fax documents. An inexpensive add-on with limited computer-fax integration (inbound faxes are not supported), it is nevertheless a good fax solution for those already invested in FirstClass, and it is well-integrated with the rest of the system.

▸ **4-Sight Fax 3.0** from 4-Sight L.C. is the slickest computer-fax product we have seen. Its send-and-receive server and easy-to-use client component offer complete fax functionality to end users. It offers easy integration with popular e-mail systems and lets you fax directly from any Mac application. Perhaps its best feature is its drag-and-drop interface, which allows you to fax a group of heterogeneous documents in a single transmission.

	Faxcom 2.0	FirstClass Fax Gateway 2.0	4-Sight Fax 3.0
Overall value	◆◆◆	◆◆◆	◆◆◆◆
List price	$495*	$495	$595**
Performance	◆◆◆◆	◆◆◆◆	◆◆◆◆
Features	◆◆◆	◆◆	◆◆◆◆
Ease of use	◆◆◆	◆◆◆	◆◆◆◆◆
Documentation/support	◆◆◆	◆◆◆	◆◆◆◆

**For 10-user license; configurations available up to $7,495 site license. Also requires Faxcom server, beginning at $5,995. Faxcom for Macintosh Special Bundle, including 100-user license and Faxcom 3000 Dual Channel Server, $12,995.*

***For five users and a single fax line; configurations available up to $40,000 for site license with 12 lines. Upgrades, $19 per user plus $99 for server software.*


File Edit Job
Local Zone:BFC Fax Gateway
3 jobs in Manager log.
FAXCOM is online
Document From To Status
Memo Jonathan A. Oski Alan (MYM Mac Sup) Sent and Deleted at 2:24 PM on 7/11/95
Memo Jonathan A. Oski Nick Kitchener Sent and Deleted at 2:17 PM on 7/11/95
PaperPort Selection Jonathan A. Oski Jeff Green Sent and Deleted at 11:36 AM on 7/19/95
Licensed to Jonathan A. Oski of BOT Financial Corp.

The Faxcom Manager server and end-user package manages incoming and outgoing faxes. You can cancel pending faxes, view incoming faxes, specify cover sheets and manage address books.

7/27/95 8:15 am

Royce Walthrop 419-555-3543

FAX

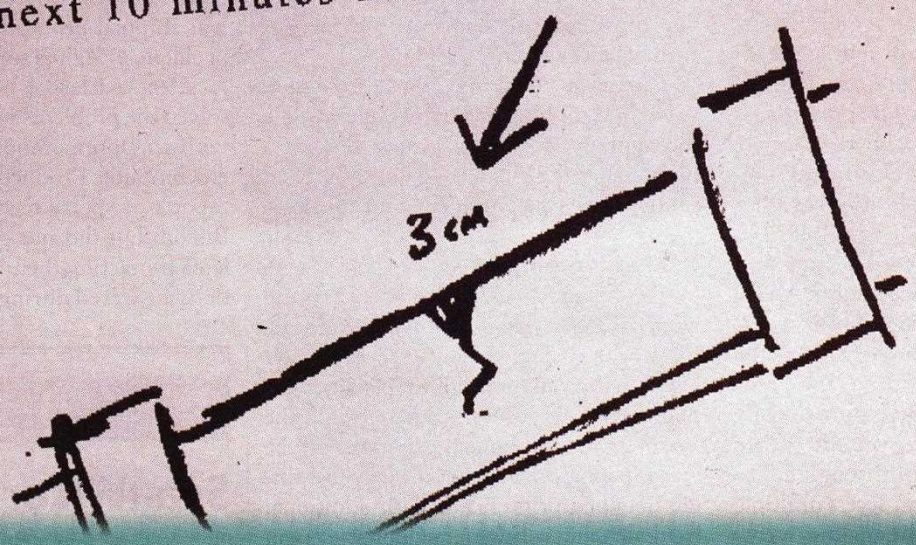
To: Bob Anderson

From: Royce Walthrop

Re: On site damage report

Bob,

It's Tues. morning, August 8th. I'm at the sight where the damage occurred, in the middle of nowhere about 120 miles west of Philly — here's a quick sketch of the pattern of the crack. Call me back in the next 10 minutes and let me know what you think.



Thanks.
Royce

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Besides the capability of sending faxes, you can also fit in your pocket: a hand-held computer that can send and receive e-mail / an optional paging system / a datebook that not only stores appointments but reminds you of them / an address book that organizes thousands of contacts and even dials them for you / the ability to synchronize with your Windows-or Mac OS-based computer / hundreds of useful programs / a place to store your important business documents, correspondence and even a good book / pen-based navigation and data entry that's more comprehensive than ever before.
For the Apple MessagePad dealer near you or fax-back information, call 1-800-909-0260.

Newton

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Making information as mobile as you are.

Fax server requirements

Setting up a client-server fax solution eliminates the need for individual fax modems for each user, but it will require some extra hardware for the server.

Biscom Inc.'s Faxcom for Macintosh 2.0 works with any of Biscom's line of fax servers, which start at about $6,000. The $12,995 Faxcom for Macintosh Special Bundle that we tested includes a Faxcom 3000 multiline server that supports up to four phone lines and a 100-user license. The Faxcom 3000 server is essentially an Intel-standard PC clone running Unix System V Release 3.2. No additional fax modems are necessary because they are incorporated directly in the server. Along with Macs, the Faxcom server can run with a host of systems, including minicomputers, mainframes, Unix systems and PC LANs.

In addition to the Faxcom server, the program requires a dedicated Mac with at least a 16-MHz 68030 CPU, System 7.1 or greater, 4 Mbytes of RAM, and 100 Mbytes of hard disk space. You'll also need MacTCP 1.1.1 or greater to forward faxes spooled from workstations to the server over a TCP/IP link.

SoftArc Inc.'s FirstClass Fax Gateway 2.0 requires a dedicated Mac with its own fax modem and telephone line. SoftArc recommends an SE/30 or better running System 7, along with 4 Mbytes of RAM and 4.5 Mbytes of disk space for the fax gateway software. The software, which is based on STF Technologies Inc.'s STartFaxing program, supports a variety of popular Class 1 and Class 2 fax modems. You'll also need a FirstClass server somewhere on your network.

4-Sight L.C.'s 4-Sight Fax 3.0 requires a Mac with a fax modem and phone line. Unlike FirstClass, it supports only Class 2 fax modems. 4-Sight recommends a 68020-based Mac or greater running at least System 6.0.5 (with MultiFinder), with 9 to 14 Mbytes of RAM. For multiline configurations, 4-Sight supports Creative Solutions Inc.'s four-line Hurdler and two-line Hustler serial-port NuBus cards.

— By Jonathan A. Oski

Fax

From Page 78

istics of the fax software, such as specifying a hot key to quickly switch from a printer destination to the 4-Sight gateway.

The program's best feature is the Draggin' Drop application, which lets you fax a document by simply dragging it onto the Draggin' icon. This automatically launches the application, prepares the document for faxing, opens your address book and prompts you for a recipient. You can use this to send multiple documents created with a variety of applications as a single fax transmission. For example, you could send a Microsoft Word document, a Microsoft Excel spreadsheet and an Adobe Illustrator drawing as a single fax by selecting them all and dropping them on the Draggin' icon.

4-Sight's address book is functionally similar to Faxcom's, letting you add entries manually or import them through a tab-delimited text file. You can access multiple address books with 4-Sight, making it easier to maintain both private and public address books. The program also supports OCR via third-party packages such as Xerox Corp.'s TextBridge, Caere Corp.'s OmniPage and Calera Recognition Systems Inc.'s WordScan.

FirstClass Fax Gateway

The FirstClass Fax Gateway offers a more limited set of functionality than the two other products because it is a gateway only. Nonetheless, it performed flawlessly during our tests and is well integrated with the FirstClass mail and conferencing server, which should make it very appealing to those already set up on that system.

To send a fax in FirstClass via the Fax Gateway, you simply address the message with the fax number of the recipient and the fax gateway name in the "To:" field. You can attach text or PICT files to a mail message and they will be transmitted with your fax message. You cannot attach other kinds of documents in their native format; you must convert them to PICT or text format before faxing.

You can use the FirstClass address book to aid in the addressing of messages, and it, too, supports importing names. The main limitation to the FirstClass gateway is that it cannot receive incoming fax transmissions.

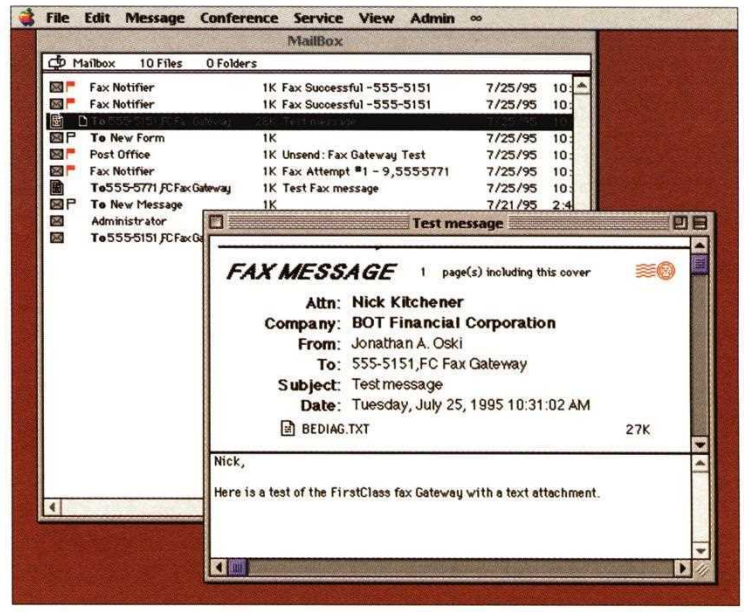
Inbound routing

While fax servers can provide economical alternatives to paper-based fax machines for sending faxes, they offer even higher value when configured to perform inbound routing of received faxes. Both the Biscom and 4-Sight configurations can be set to spool received faxes directly to a single network printer, but with additional hardware and software, both products can support either direct-inward-dial or dual-tone modulated frequency code routing of received faxes. Though these options can be pricey, costing $1,700 to $20,000 depending on your telephone equipment, they offer enhanced security by allowing faxes to be routed directly to a user's workstation, rather than being sent to a server or sitting in the open on paper-based fax machines.

Performance

Overall, we were satisfied with the performance of all three fax gateway products. We used relatively low-end Macs as our fax servers (including an LC II and IIsi) and found that they could easily keep pace with a barrage of faxes and attachments. If you need a high-volume solution, the key is adding phone lines, because fax transmission itself appears to be the real bottleneck. The 4-Sight Fax server can accommodate up to 12 lines, and the Biscom solution can scale even further in multiserver, rackmounted configurations.

We found that it was surprisingly quick to view received faxes from the 4-Sight Fax server. Once you've retrieved the image, it's easy to rotate or scale the image if it was sent improperly. The Biscom viewer also worked well but was not as quick as 4-Sight's.


File Edit Message Conference Service View Admin
MailBox
Mailbox 10 Files 0 Folders
Fax Notifier 1K Fax Successful -555-5151 7/25/95
Fax Notifier 1K Fax Successful -555-5151 7/25/95
To New Form 1K 7/25/95
Post Office 1K Unsend: Fax Gateway Test 7/25/95
Fax Notifier 1K Fax Attempt #1 - 9,555-5771 7/25/95
To555-5771 FC Fax Gateway 1K Test Fax message 7/25/95
To New Message 1K 7/21/95
Administrator
Test message
FAX MESSAGE 1 page(s) including this cover
Attn: Nick Kitchener
Company: BOT Financial Corporation
From: Jonathan A. Oski
To: 555-5151,FC Fax Gateway
Subject: Test message
Date: Tuesday, July 25, 1995 10:31:02 AM
BEDIAG.TXT 27K
Nick,
Here is a test of the FirstClass fax Gateway with a text attachment.

To send a fax via SoftArc's FirstClass client software, users select any form and type the number and the name of the fax gateway in the "To:" field of the message. The gateway adds the necessary origination station ID and your voice and fax numbers to the heading of the outgoing fax transmission.

Support

All three companies offer very good technical support for their fax servers. We had some minor problems with the disk we received from SoftArc, but a replacement was shipped promptly that corrected the problem. 4-Sight's support staff helped us to select a Class 2 modem that quickly solved the problems we were experiencing with an Optima modem from Hayes Microcomputer Products Inc. We had heard reports of spotty technical support from Biscom but did not encounter any problems contacting them or getting our questions answered during our review.

Conclusions

Each of the fax servers we reviewed offers capabilities well-suited to specific computer-fax integration requirements. Users of SoftArc's FirstClass will find the Fax Gateway a worthwhile extension to an already well-rounded messaging product, but the addition of inbound fax routing would help.

If you need to fax directly from your applications, integrate with e-mail and optionally upgrade to inbound routing, both 4-Sight Fax and Faxcom for Macintosh are good solutions. We favored the look and feel of 4-Sight's solution over Biscom's. It also cost less and didn't require any non-Macintosh hardware. However, Faxcom is an industrial-strength product that can be integrated with virtually any system, including mainframes and minicomputers, and may be the way to go for high-end, enterprisewide needs.

Biscom Inc. of Chelmsford, Mass., can be reached at (508) 250-1800; fax (508) 250-4449.

4-Sight L.C. of West Des Moines, Iowa, can be reached at (515) 221-3000; fax (800) 448-3299.

SoftArc Inc. of Markham, Ontario, can be reached at (905) 415-7000; fax (905) 415-7151; FirstClass BBS (905) 415-7070; sales@softarc.com. □

IN BRIEF

ScanWizard 3.0

Plug-in improves results from Microtek scanners

Overall value ◆◆◆◆

Microtek Lab Inc.'s new ScanWizard 3.0 is a scanner plug-in with such a strong effect on scanner functionality and image quality that it essentially redefines all of the Microtek scanners with which it works. This is particularly true of the company's flagship $2,699 600-dpi, 36-bit ScanMaker III flatbed. The software is bundled with all new 24-bit and 36-bit Microtek scanners and is available as a free upgrade for owners of previous versions of the software.

While 36-bit scanners offer much greater capabilities than lower-end machines for producing high-quality scans with the contrast and color balance you want, the scanner software has to let you work well with the 12-bit-per-color data. Unfortunately, Microtek's ScanMaker III was previously hampered by some very poor software that made it difficult, if not impossible, to take full advantage of its very capable hardware.

With ScanWizard 3, this has improved dramatically. The previous software limited you to a tiny, postage-stamp-size preview image that was much too small to use as a basis for making decisions about color and tone, and it lacked any numerical feedback about the pixel values in the image. The limited curve-based editing it provided was very crude, and the plug-in offered no way to bring the entire 12 bits the scanner could capture into Adobe Photoshop.

See ScanWizard, Page 82

Newton

Mail Message

Subject: The Final List
From: Bob Anderson@eworld.com
To: Royce Walthrop

Date: 95-08-8 16:06:34PDT

Here is the product list you needed. Please call me as soon as you get it - I need a response ASAP.

3 Echocardiogram Machines
2 Chemical Analyzers
1 Positron Emission Tomography scanner
6 Holter Monitors
2 Colonoscopes
6 Defibrillators
3 Pulmonary Spirometers

Names Dates Extras Undo Find Assist

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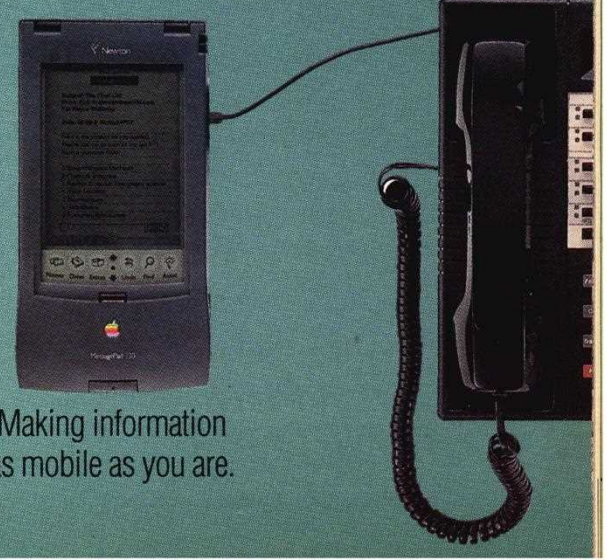


Making information as mobile as you are.

ScanWizard

From Page 80

ScanWizard 3 addresses these shortcomings and more. The preview now takes place in its own resizable window, which also contains a basic tool bar. A Zoom Preview tool lets you select an area of the image and perform a high-resolution preview scan. The full-size preview is held in a buffer, so you can toggle between the full-size and zoom previews. A Magnifying Lens tool lets you magnify the preview image by making the pixels bigger; the Zoom Preview actually rescans the selected area at a higher resolution.

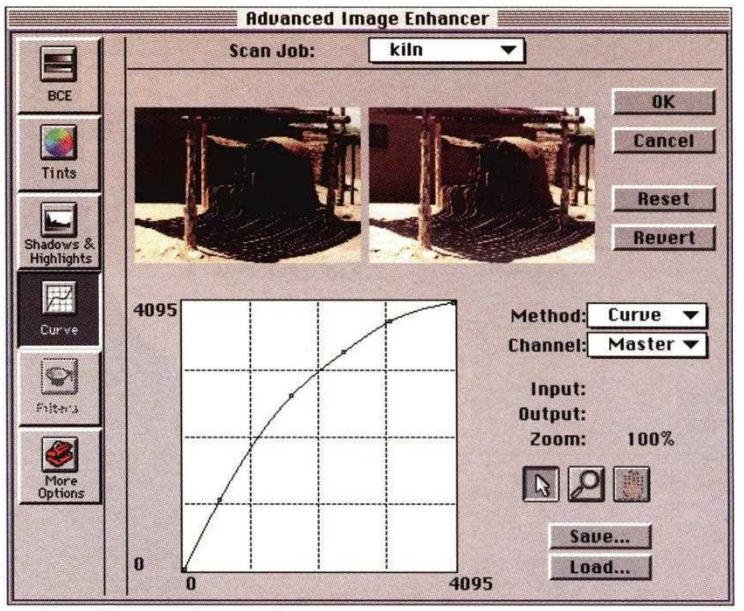
ScanWizard now offers a very straightforward, easy-to-use implementation of batch scanning that we found to be highly productive.

The Scan Frame tool lets you set up a scan job with settings for image type, resolution and image enhancements. You can set up multiple scan frames to scan the same image in a number of ways. You can also place several images on the scanner, use the Scan Frame tool to define multiple scan jobs (each with its own scanning specs) and then scan them as a batch. A separate Scan Job palette lists all the jobs you've defined, lets you change their position in the queue, and allows you to change the settings or duplicate the scan job to apply the settings to another image.

The Color Picker tool functions as an on-screen densitometer and also lets you set shadow and highlight points for each job. When you pass the cursor over the image, the Information window provides a zoomed-in view of the area immediately below the cursor, along with numerical readouts of the cursor's x and y location, and the pixel values it is sampling both before and after any image enhancements are applied. You can set the eyedropper to read single pixels or an average of several pixels up to a 5-by-5-pixel sample.

Image enhancement

ScanWizard's other major improvement is the new image-enhancement tools, which offer a number of options for fine-tuning the scan. Our one complaint is that these tools don't work interactively with the preview image — you have to OK the changes before the preview updates, and the only feedback you get while you're making adjustments is based on small before and after images.



ScanWizard 3's Image Enhancer dialog features a number of powerful tools for enhancing an image prior to performing a scan. At the center of the dialog are thumbnails of your image both before (left image) and after (right image) any adjustments have been made.

This is still a huge improvement over the previous version, which forced you to actually perform a scan to get meaningful feedback, but we'd like to see the changes we make in the Advanced Image Enhancer dialog applied to the preview image in real time. We'd also like the dialog to be movable and nonmodal. It occupies the center of the screen, and you can't do anything else until you've closed it.

For experienced users, the most important of the image-enhancement tools is the Curve feature, which provides an interface similar to Photoshop's Curves command. You can, in fact, load curves that you created and saved in Photoshop if you prefer, though ScanWizard's tool is considerably more flexible, letting you set up to 64 points on the curve rather than Photoshop's maximum of 19. You can also save ScanWizard curves in Photoshop format, but you're then subject to Photoshop's limit on the number of points.

Conclusions

When you work with Microtek's ScanMaker III, the difference between ScanWizard 3 and the older plug-in software is little short of staggering — it's hard to believe you're still using the same scanner. Microtek's current 24-bit flatbeds can benefit too, particularly from the batch scanning features and the zoom preview, but the payoff in being able to work with the high bit data captured by the ScanMaker III is immense. We'd like to see the image-enhancement features working in real time on the preview image, but other than that, ScanWizard 3 delivers almost everything we could ask for in a scanner plug-in.

Microtek Lab Inc. of Redondo Beach, Calif., is at (310) 297-5000; fax (310) 297-5050.
— *By Bruce Fraser*

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K-AShare – allows Macintosh computers to use a UNIX host as an AppleShare file server.

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Server to the Macs...

reviews FORUM

User says PowerCADD review missed some key features

In the review of Engineered Software's PowerCADD 2.0 (see MacWEEK, July 10, Page 39), reviewer Tim Johnson cited examples of features that were "most important." However, as a 6-year user of PowerDraw, I think there were many important new features that were not cited.

Johnson's comment that "Version 2 has a new 3-D look to its interface" was fluff du jour, as the screen shot looked exactly like PowerDraw Version 6.0 to me.

I disagree with the comment that "Usually a subscription [publish and subscribe object] will work better than an instance [library symbol object]." The reviewer doesn't appreciate the differing logical and practical reasons to have four categories of "imported" object groups in a PowerDraw or PowerCADD file for engineering departments (pasted/imported, grouped library symbols, instance library symbols, and publish and subscribe objects).

Publisher changes execute revisions to every subscribed file, with no individual control, announcement or engineering change order. Often in manufacturing, the engineering department needs absolute control over whether a drawing is updated or changed in any way; hence, no publish and subscribe objects.

Johnson didn't mention that PowerDraw 6 is incredibly productive and fast on PowerBooks, as PowerCADD will be on the upcoming PowerPC PowerBooks, which has doomed the old paper "engineering notebook" to fossilization.

Bo Clawson
Engineer
Anamed International
Las Vegas

MacWEEK replies:

You are correct in stating that control over CAD drawing updates in a manufacturing environment is paramount. In our reviewer's CAD environment (architectural presentation and modeling), productivity is another important issue.

Our remark on the usefulness of publish and subscribe was directed toward productivity concerns when editing PowerCADD symbols. Most other CAD programs allow you to edit an instance master in a window dedicated to the purpose — the changes appear immediately over all of your instances. PowerCADD's manual substitution method is simply too time-consuming. You should not have to fall back on publish and subscribe to quickly edit symbols.

Our reviews are concerned with, among other things, introducing readers to unfamiliar products. One way of doing this is to publish screen shots showing a variety of available tools and ancillary windows. This lets the curious reader deduce many of the features we aren't able to mention because of space constraints.

Send your comments to MacWEEK Reviews Department, 301 Howard St., 15th Floor, San Francisco, Calif. 94105; fax (415) 243-3602. Include your name, address and phone number. We reserve the right to edit for clarity and length.

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With the Apple® MessagePad™ 120 personal digital assistant with Newton® technology you can. Not only can you stay organized and on top of every last date and person and fact you need, but you can constantly refresh and update information whether you're at your desk or on the road. All your most important and current information is always at your fingertips.

And MessagePad also lets you take: a hand held computer that can send and receive e-mail / the capability of sending faxes / an address book that organizes thousands of entries and dials them / a calendar that interfaces with your address book / the ability to synchronize with your Windows-or Mac OS-based computer / a place to store your important business documents, correspondence and even a good book / hundreds of useful programs / pen based navigation and data entry that's more comprehensive than ever before.

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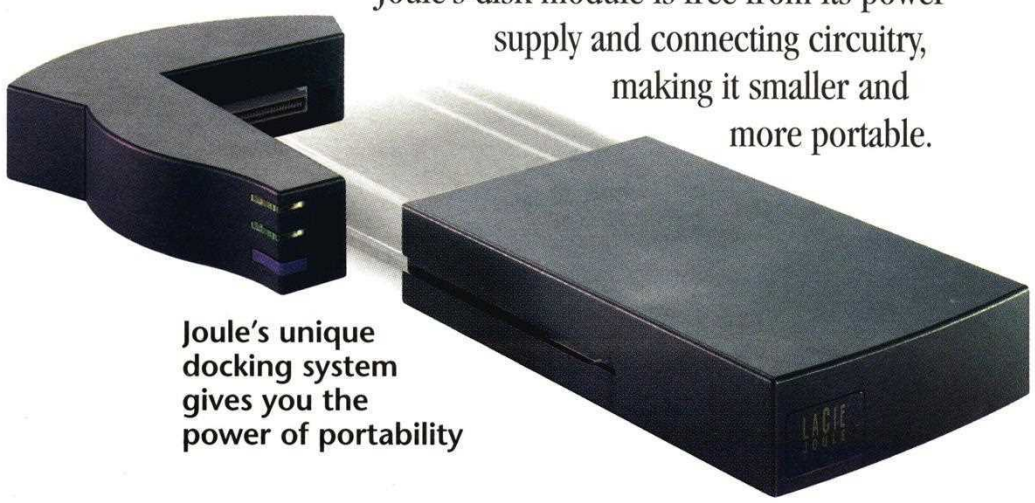
For just $389 you can purchase ***over*** 1 Gigabyte of high quality internal hard disk storage. These half-height drives feature 9.5ms average seek times and reliable 3½" Quantum hard disk technology.

Or for only $489 you can have the power and unmatched convenience of Joule's Portable Hard Drives featuring revolutionary SmartDock™ technology. With SmartDock, a Joule's disk module is free from its power supply and connecting circuitry, making it smaller and more portable.



Joule's unique docking system gives you the power of portability

So when you need to share, or move, or lock away your data you can, with all the convenience of a diskette or cartridge, only bigger...1 gigabyte bigger!

We also offer a wide choice of other hard disk capacities or removable media options in the Joule format. Each can freely plug into the SmartDock for stand-alone use.

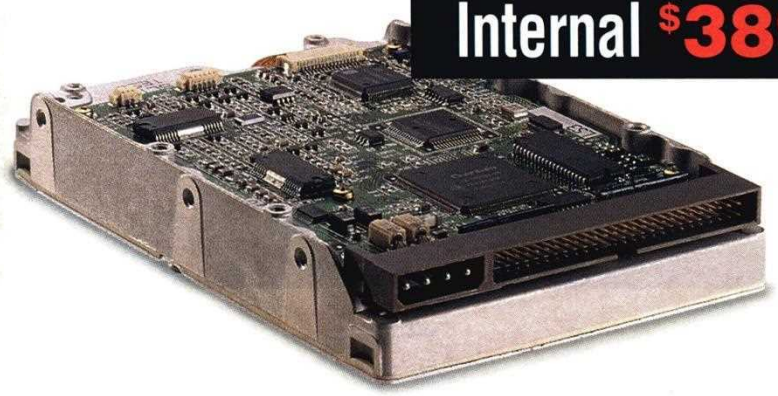
In addition, only Joule's SmartDock detachable circuitry protects your data from a rare power supply failure like no other drive can. Joule's exclusive DataSafe™ policy even replaces your dock's power supply, SCSI circuitry and fan without ever touching your disk module.

Transfer gigabytes of data the fastest way possible.

FREE PHONE SUPPORT FAST!!

30 Day Money Back Guarantee*

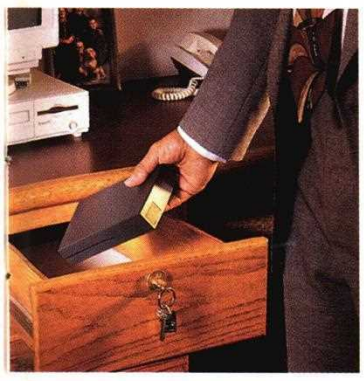
Drives $389.00



Quantum 1 GB Internal $389

And every drive includes Silverlining hard disk software, La Cie Term digital active SCSI termination, plus all the connections you need to get to work fast.

Joule's unique portability and capacity let you share, secure or expand storage without a struggle. And at these new low prices, purchasing is easier too.



Unplug and lock away data for safe keeping in seconds.

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Silverlining™ FREE with La Cie Drives!

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MacWeek – 10/94

I.D. Magazine 40TH ANNUAL DESIGN REVIEW WINNER 1994

Industrial Design Excellence Award SILVER 1994

MAC HOME JOURNAL

Joule Hard Drives

	INTERNAL†	PORTABLE w/ DOCK
3.5" Hard Drives		
Quantum – 2 or 5 year warranties		
540MB	$199	$299*
850MB	$249	$349*
1080MB	$389	$489*
2150MB	$799	$899*

$489 Joule 1080MB Hard Drive

* These drives are also available in Joule Base configurations for an additional $60.

† Brackets available for $10 with HD purchase

2.5" Hard Drives		
Quantum – 2 year warranty		
256MB	$199	$299
341MB	$299	$399
514MB	$399	$499

2-½" Internal 256MB

Joule Removable Drives

Joule Portable SyQuest 270MB
$489 With FREE Cartridge

	INTERNAL w/ BRACKET	PORTABLE w/ DOCK
230MB Fujitsu Optical Drive	$549	$649*
With Free 3.5" Cartridge – 1 Yr Warranty		
SyQuest Drives		
With 1 Free Cartridge – 1 Year Warranty		
270MB	$419	$489*
200MB†	$439	

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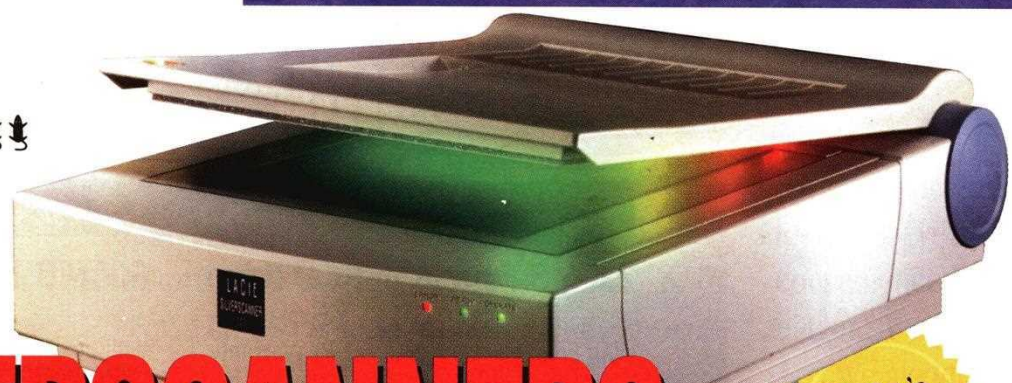

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GRAPHICS VIOLENCE

"Using Adobe Illustrator to create certain graphics is like killing a fly with a shotgun."

— Dawn Carlson-Cerf

GRAPHICS

Low-cost drawing tools can perform high-end tasks

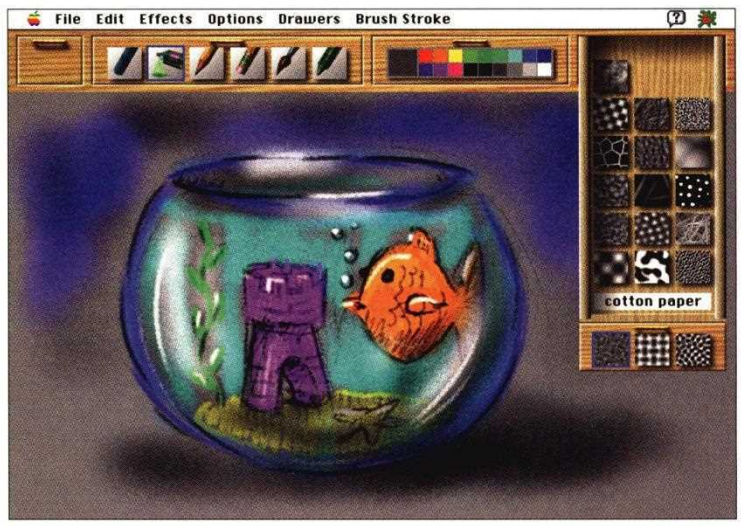
By Nancy J. McCarthy

If you're short on time, funds and training, the latest drawing apps will fill the bill.

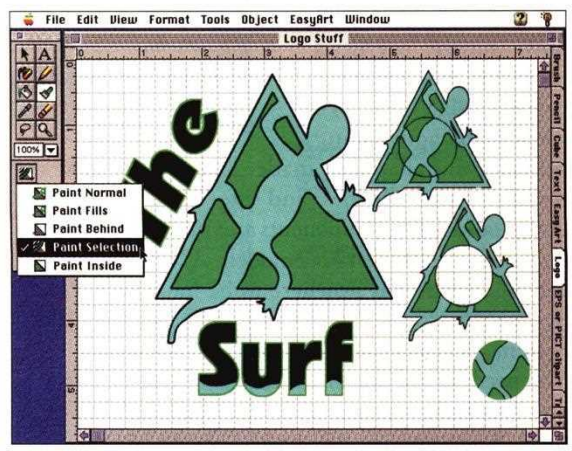
Most software programs are designed to make completing certain tasks easier, and, in general, they succeed. That's why writers use word processing programs instead of typewriters. But why do art directors or graphic designers still reach for pencil and paper to conceptualize an ad campaign, logo design or brochure layout? After all, drawing and painting software have come a long way since the days of MacPaint.

Many professional illustrators, artists and designers, although well-versed in the intricacies of the high-end graphics programs, find it easier to do thumbnail sketches or even detailed drawings with pencil and paper before moving to the computer. Part of this is habit, formed by traditional training and the instinct associated with the creative process. But the memory-intensive graphics applications offer more tools, layers and options than a designer needs just to sketch out a few ideas.

If professional artists find the high-end programs daunting at times, what about the average business user who wants to spice up a report with an attractive, high-resolution graphic? Fortunately, several new programs — and some recently revamped applications — are addressing the needs of both professional artists short on time and business users short on training. These programs include Adobe Systems Inc.'s IntelliDraw 2.0, FutureWave Software Inc.'s SmartSketch, Expert Software Inc.'s ExpertDraw, Lari Software Inc.'s LightningDraw GX and Fractal Design Corp.'s Dabbler. Although most are priced well below the traditional favorites such as Macromedia FreeHand and Adobe Illustrator, these programs often transcend the "low-end" moniker by the surprising richness of their capabilities and their innovative use of new technology.



In Fractal Design's Dabbler, users can click on the handles of the drawers for more tools and from the tool bar select background paper textures to draw on.



In FutureWave Software's SmartSketch, users select objects from the EasyArt book and manipulate them to create a logo.

Smart tools

Released in May, SmartSketch is a simple drawing program that includes some innovative features for its $69.95 price tag. One of the co-founders of FutureWave Software is Charlie Jackson, founder of the now-defunct Silicon Beach Software Inc., which was the original developer of SuperPaint. It's no surprise then to learn that one of the highlights of SmartSketch is its easy-to-use interface; it works like a painting application, even though it's a vector-based drawing program.

"I'm always skeptical when I hear about a new graphics program," said Darryl Gordon, dean of students and computer education supervisor at The Advertising Arts College in San Diego. "We have FreeHand and Illustrator. How much more do we need? The biggest problem with [Illustrator and FreeHand] is that we are forced to use them the way they were designed," Gordon said. "SmartSketch reacts as if I were drawing by hand. It has completely broken the mold of computer illustration programs."

The SmartSketch feature list includes a vertex to be shared by more than two lines, the ability for a single line to define a fill, and an eraser tool that lets users erase portions of lines and images in one step. These capabilities are either difficult or impossible in Illustrator and FreeHand. Since SmartSketch manages the control points transparently, there is no need to learn about Bezier curves and anchor points; the user can click anywhere along a line or curve and drag to reshape the image. "It's a PostScript program that looks like a draw program and has paint capabilities," Gordon said.

Although he said he doesn't see SmartSketch replacing Illustrator and FreeHand, Gordon plans to use the program with a pressure-sensitive tablet to create thumbnail sketches, which can then be opened in either FreeHand or Illustrator as editable EPS images.

Slinging images

Dawn Carlson-Cerf of family-owned Ink Slingers of San Jose, Calif., doesn't have Gordon's traditional graphic arts background but still needs to come up with high-resolution PostScript graphics for customers who want nice-looking images added to their business cards and fliers. She uses SmartSketch to change the color of EPS images or to take apart a piece of clip art to be used on a client's publication. Carlson-Cerf bought the program without having tried it because of its promise of EPS output, its lack of Bezier handles and its price. "I'm constantly on the lookout for inexpensive software that's easy to learn," she said. "For people who don't have a lot of time but still need high-resolution artwork, SmartSketch really holds its own."

Although they don't offer many of the

See Solutions, next page

Choosing the tools you need

Naturally, if you're trying to decide on a drawing tool, it's best to look at the program's intended use. Most graphics files fall into two main categories: bit-mapped raster graphics and vector-based object-oriented graphics. In general, vector graphics are best for images that include text or will be printed from a variety of devices. Bit-mapped graphics work best for continuous-tone images, such as photographs, and images that will be displayed on screen, such as multimedia demonstrations.

Bit-mapped graphics are defined by individual dots or picture elements, called pixels, which are usually created in a painting program by scanning in a photograph or making a screen capture. Bit-mapped graphics are most commonly saved as TIFF files and can be black-and-white or color. Some programs that can create bit-mapped graphics include Claris Corp.'s MacPaint, Adobe Photoshop, and Fractal Design Corp.'s Painter and Dabbler.

Bit-mapped graphics will produce jaggies, images with a stair-stepped appearance when enlarged, whereas vector graphics can be more easily resized or scaled without introducing any distortion.

Vector graphics are defined by groups of lines, circles, text and other objects (thus the "object-oriented" label) and are usually created in drawing programs such as FutureWave Software Inc.'s SmartSketch, Macromedia FreeHand, Lari Software Inc.'s LightningDraw GX, and Adobe Illustrator and IntelliDraw. Vector-based images are commonly saved as EPS files and can be black-and-white or color.

— By Nancy J. McCarthy

MACINTOUCH RIC FORD

Relationship will grow between PCI Macs, users

Apple announces the core of its second-generation Power Macintosh family this week, and I can finally talk about the machines I met a month ago in MacWEEK's testing labs. They introduce exciting improvements, but we will have to get better acquainted in the months ahead. The process of testing is slow and tedious, and the failure of a promised benchmarking suite burned up valuable time in the lab, leaving no time to explore the new machines in a normal work environment before Apple's deadline for their return.

Take cues about the new systems from Power Mac 9500 experiences.

The experience also proved to be a lesson in how much overhead there is in managing the current Mac OS. We spent many hours doing software installations, made longer by installer-script glitches and the hodgepodge of Mac OS components and updates required for different Mac models. A "universal" system was nowhere to be found. System 7.5.1 does not run on new Macs; System 7.5.2 does not run on previous ones. You need special files and updates for various hardware options and software features. Sometimes, in the thick of things, it almost seemed as if a single, DOS-like .INI file would be easier to manage than the randomly named collections of files scattered throughout various Mac folders.

Systems-management issues aside, the new boxes should be terrific. Processing and video are improved, but the real leaps are in other, equally important areas of performance.

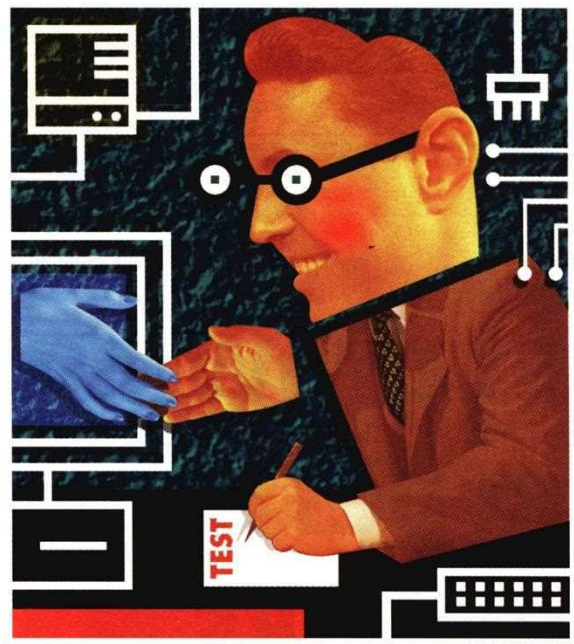
A true breakthrough

The PCI bus is a true breakthrough. Its high performance and open architecture relegate other Macs to a bygone era and open the throttle for graphics, networking and storage cards.

The new SCSI hardware is another, long-overdue step forward. I watched as transfer rates almost doubled in drives moved from the classic external SCSI bus to a new internal bus that finally offers SCSI-2 Fast synchronous support. Arrays are cheaper and easier to construct now, thanks to the fast internal bus and dual SCSI buses on the 7500, 8500 and 9500.

Inexpensive PCI SCSI cards should provide the same boost for external drives without the high entry price of current NuBus SCSI cards. For peak performance, you can allocate multiple PCI SCSI cards to an array.

Much of the PowerPC's speed comes from blasting data between processor and memory. The 7500 and 8500 double the memory bus to 128 bits, which should be another advantage. Level 2 cache, as before, is essential for all Power Macs to reach their potential, especially for 680x0 emulation.



GORDON STUDER

Although not nearly as important as the other improvements, the speed of Apple's new CD-ROM drive was a noticeable bonus during testing.

Taken together, these changes will improve real-world Mac performance a lot. Apart from any unforeseen bugs, major compatibility issues or manufacturing problems, the machines should please buyers and drive down the price of older systems quickly.

PCI preview: 9500

Speaking of compatibility issues, we can take some cues about the new systems from Power Mac 9500 experiences. Discussions about the new machines have been active in eWorld's Ask Apple section, where Apple and users have been contributing lots of information. (The discussions would be even more useful if eWorld's messaging interface had a few more of the basic capabilities of the CompuServe and Usenet browsers.)

Along with Open Transport and RAM compatibility (see MacWEEK, July 31, Page 38 and July 24, Page 36), some of the Power Mac 9500 issues include:

- Apple's current driver for the LaserWriter 300 and Personal LaserWriter LS printers is incompatible with the 9500, and there was no estimated date for a fix when I looked.
- Resetting parameter RAM on the 9500 turns on virtual memory, a change in behavior.
- If serial ports do not work after a crash (on any Power Mac), resetting PRAM may solve the problem.
- Current versions of Apple's Newton Toolkit (1.0.1 and 1.5.1) are incompatible with the 9500. A fix is due later this year.
- PlainTalk Speech Recognition is untested and unsupported, according to Apple, on the 9500, but the 9500 does support Text-to-Speech 1.3.
- Symantec Corp.'s CopyDoubler, Suitcase and Symantec AntiVirus for Macintosh utilities all reportedly have problems on the new Macs.
- We encountered mounting glitches on the PCI Macs with SCSI Probe and HDT Prober. □

Comments on MacInTouch are welcome at (508) 897-2621. Please address e-mail to 72511,44 on CompuServe or ricford@macintouch.com on the Internet. The MacInTouch home page is at http://www.macintouch.com/~ricford/.

SOLUTIONS

From previous page

new features found in SmartSketch, a few other drawing and painting programs offer simplified interfaces and low price tags. One such program, which was originally introduced in 1992, is Adobe's IntelliDraw 2.0. At $99, IntelliDraw is a surprisingly feature-rich, vector-based drawing program that helps users automate drawing tasks with a variety of "smart" tools and templates. Adobe also offers SuperPaint 3.5, the black-and-white and color bit-map painting program developed by Jackson's Silicon Beach Software. The program is available for $49.99, or $69.99 for the Deluxe CD-ROM version, which includes 1,500 ready-to-use graphics.

Mapping bits

There's also Fractal Design's $79 Sketcher, a gray-scale bit-map program that includes painting, drawing and image-editing functions and fine art tools such as watercolor brushes, calligraphy pens and pencils. The Mac version of Sketcher, which was introduced in the fall of 1992, has not been updated since it was introduced, however.

A more recent bit-map painting program from Fractal Design is Dabbler for Mac and Power Mac, a $99, 16-bit color painting and drawing application that boasts more of the "natural media" paint tools that have made the company's Painter one of the most widely used high-end paint programs. Dabbler offers 54 drawing tools and 20 paper textures and is compatible with the Photo CD format, making it an appropriate tool for business users who lack the time and level of skill required to make the most of the more complex painting and drawing applications. Dabbler, which includes playback sessions based on the Walter Foster how-to art books, published by Walter Foster Publishing Inc. of Tustin, Calif., is also handy for educators and anyone looking to learn the basics of drawing and painting on the computer.

Looming on the horizon for people looking for alternatives to Illustrator and FreeHand is Lari Software's $299 LightningDraw GX, introduced at Macworld Expo in January and scheduled to ship this month for both 680x0 and PowerPC Macs. LightningDraw GX is the first drawing program to take advantage of the color and type capabilities offered by Apple's QuickDraw GX, and a copy of QuickDraw GX is included. Like SmartSketch, LightningDraw GX combines vector-based drawing tools with paintlike features, with the ability to grab and drag any point along a line or object instead of having to deal with control points. The program also includes more-sophisticated features, such as transparency, shading and tinting effects, automatic text effects, support for different languages and fonts, paint effects, and automatic ColorSync color-matching capabilities.

Keeping it light

With the exception of LightningDraw GX, none of the programs mentioned even attempts to compete with the heavy hitters when it comes to high-end pre-press and output needs. The general feeling is that such tools certainly won't replace professional graphics programs such as FreeHand, Illustrator, Painter and Adobe Photoshop, but they can certainly complete specific tasks without a huge investment in time or money. When asked about her decision to purchase SmartSketch, Carlson-Cerf said, "Even if the program turned out to be shelfware, I figured I wouldn't lose too much money if I didn't like it. But it is definitely not shelfware. I use it every day." □

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FUTUREWAVE SOFTWARE INC.
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LARI SOFTWARE INC.
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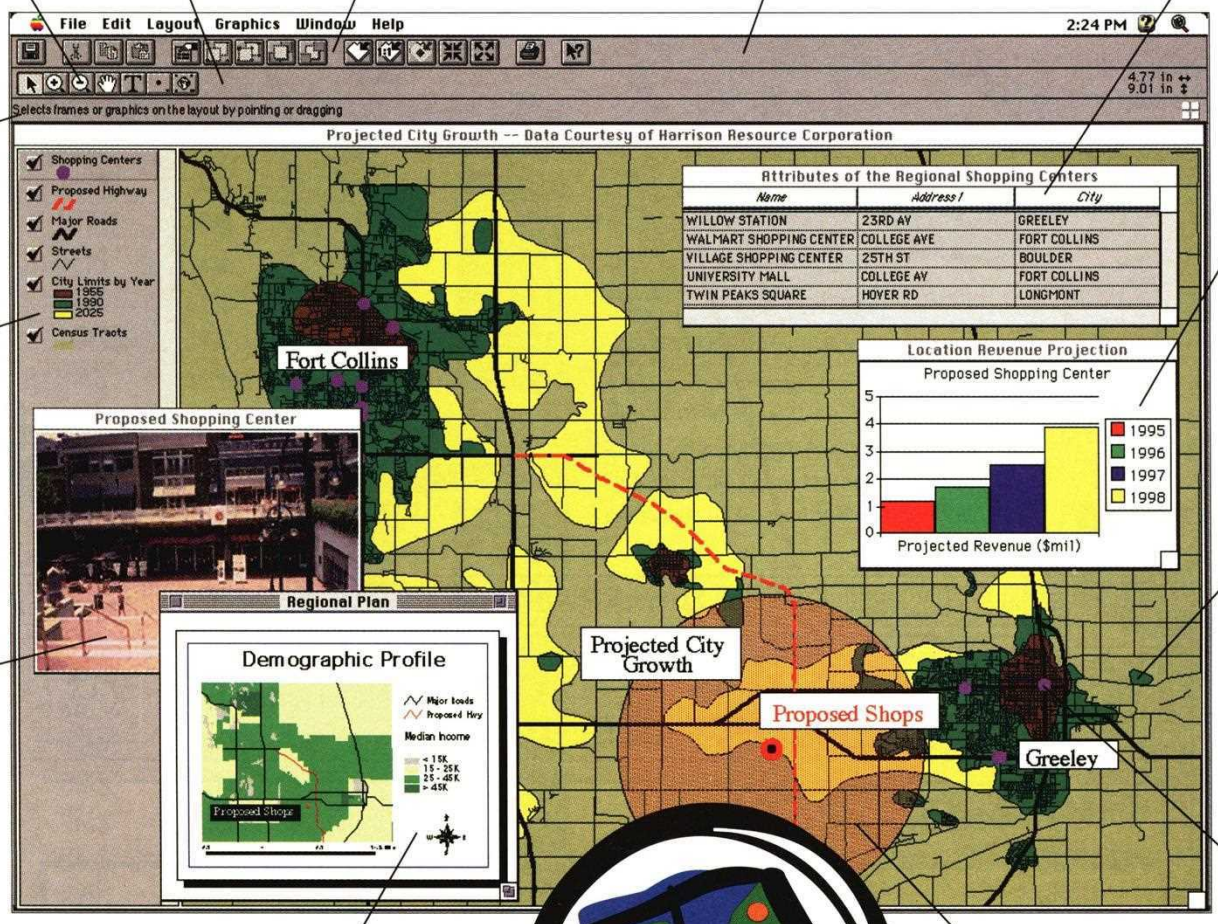

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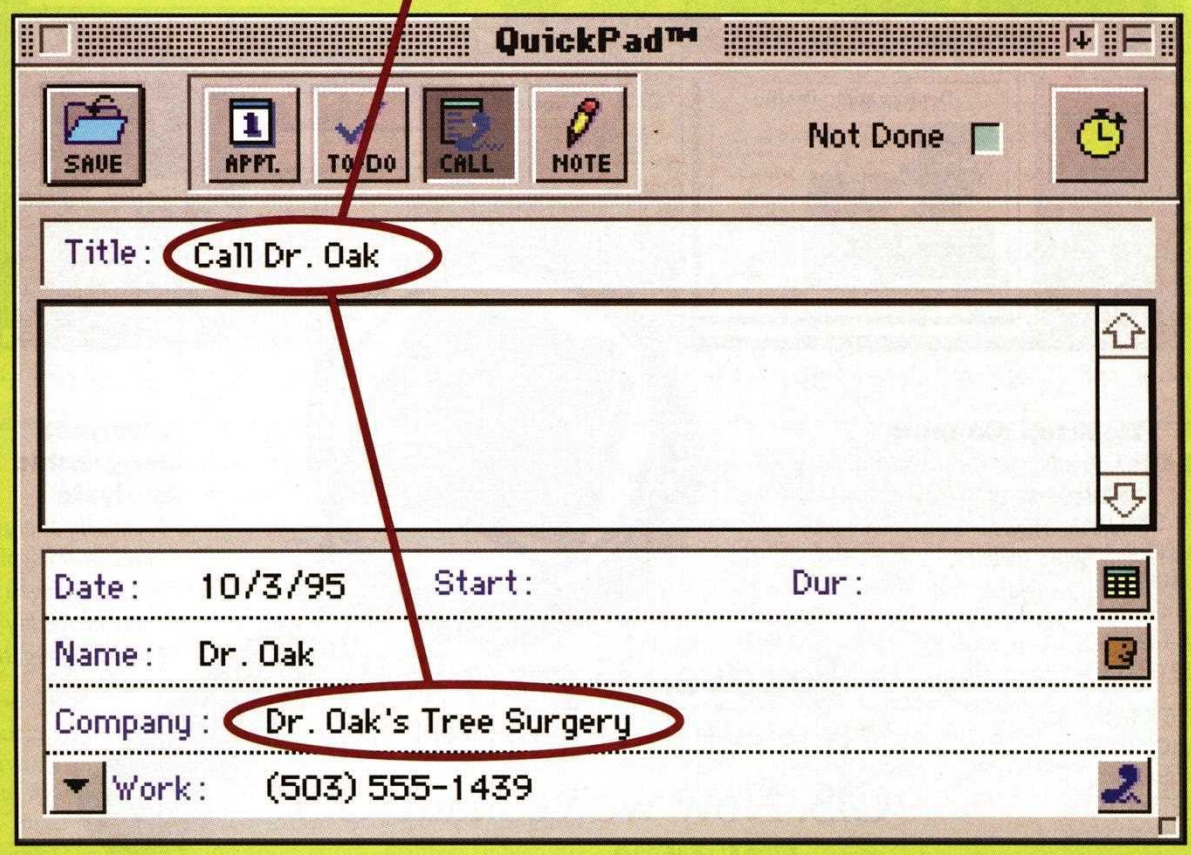

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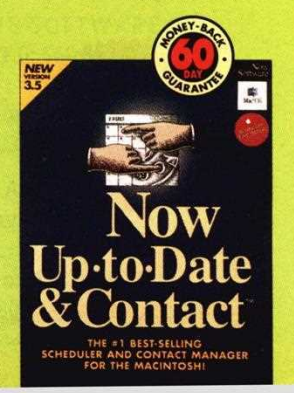

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10 Blank CD's	$ 89	120M Tape	$ 20
88MB Squest	$ 48	200MB Syquest	$ 76
105MB Syquest	$ 54	270MB Syquest	$ 61

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FROM 1 TO 84 GIG

Our top rated RAID Systems include an Atto accelerator card, Remus RAID software, and all cabling.

"Stick with a vendor such as Direct Connections that understands how to prepare a RAID for desktop video." MacWorld April '95

- 2.0 GIG RAID Level 0. Perfect for highspeed requirements. — $ 2199
- This Array is the one to beat!! 4.0 GIG Wide Raid — $ 3399
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Atto Silicon Express IV $835 accelerator card

VideoVision Studio $ 3649
Full screen and full motion recording and playback with JPEG hardware compression and decompression.

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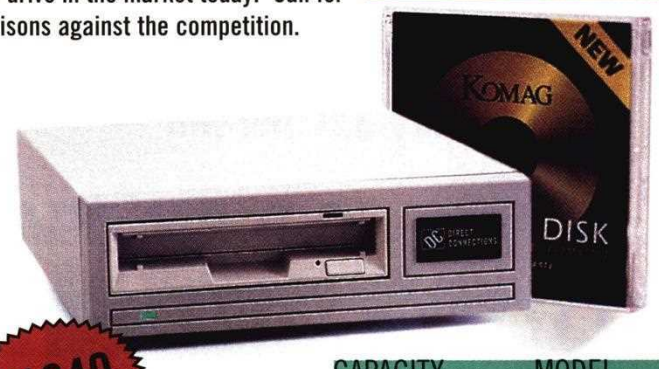
OPTICAL DRIVES

The New Sony 1.3GB half-height has 4MB of Cache and 3600rpm making this the fastest Optical drive in the market today! Call for comparisons against the competition.



$1949.

1 YEAR WARRANTY

ALL OPTICAL DRIVES INCLUDE CARTRIDGE, CABLING, AND SOFTWARE.

CAPACITY	MODEL	EXTERNAL
230MB	Fujitsu	$ 575
1.3GB	NEC	$ 1599
1.3GB	Sony 4MB cache	$ 1949
1.3GB	Ricoh Turbo	$ 2175
Sony's latest technology → 26GB	Sony Jukebox	$ 6395

TAPE BACK-UP

2 YEAR WARRANTY

We are the tape-backup Experts

40GIG

With 2.5mb/sec sustained transfer, the DLT4000 is perfect for digital video or pre-press with large data files.

$4999.

All enclosures include one tape cartridge, cabling, and Retrospect software.

CAPACITY	MODEL	MEDIA	INTERNAL	EXTERNAL
1GIG	Tandberg	1/4"		$ 449
1.3-2GIG	DC DAT	4MM	$ 709	$ 769
1.3-4GIG	DC DOUBLE DAT	4MM	$ 839	$ 899
4.0-8GIG	Sony 5000 DDS-2	4MM	$ 939	$ 999
7.0-14GIG	Exabyte 8505XL	8MM	$ 2135	$ 2195
-32GIG	Conner Autoloader	4MM		$ 2475
-40GIG	DLT4000	1/2"		$ 4999
-50GIG	Exabyte-10i	8MM		$ 2895
-140GIG	Exabyte-10h Library	8MM		$ 4999

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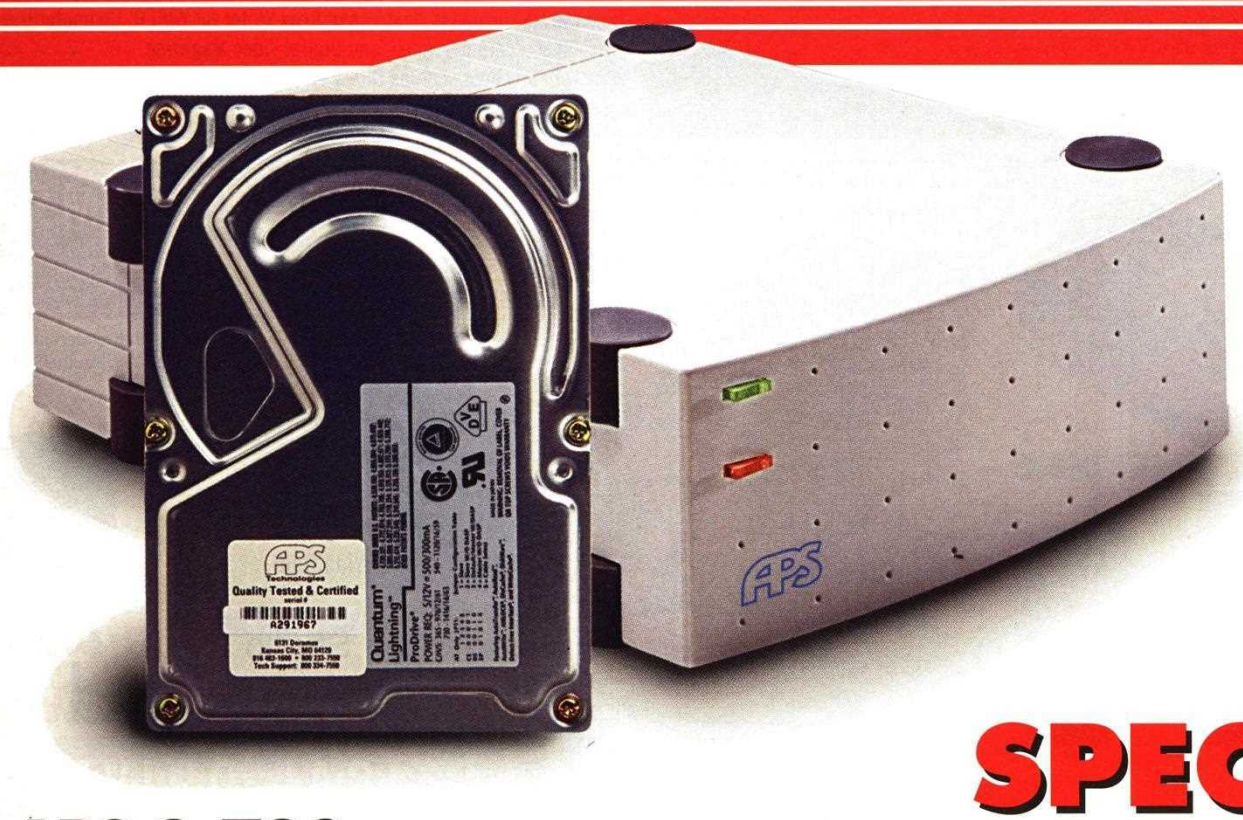

730MB APS Q 730
$219.95
Internal Config.

APS Q 730

- ✔ Up to 700MB formatted capacity
- ✔ Outstanding value! – Only 33¢ per MB
- ✔ 2-year warranty

SPECIAL OFFER!

APS MS 1.0

- ✔ 1GB formatted capacity
- ✔ 7200 rpm spindle speed for great performance
- ✔ 5-year warranty

$549.95

PORTABLE DRIVES			
Model	**Capacity**	**Internal**	****AC ONLY**
APS Q 341[1]	326MB	$299.95	N/A
APS Q 514[1]	491MB	379.95	N/A
APS T 504[1]	504MB	NEW FROM APS 379.95	$479.95*
APS T 800[1]	773MB	NEW FROM APS 599.95	699.95*

** AC/DC available for $50.00 extra*

***SR 1000 AC only enclosure*

DESKTOP DRIVES				
	Model	**Capacity**	**Internal**	**SR2000**
MacUser ZD LABS 3½	APS Q 540[3] Quantum 540 Fireball mechanism	516MB	NEW LOWER PRICE $189.95	$269.95
MacUser ZD LABS 4½	APS Q 730[2] Quantum 730 Lightning mechanism	699MB	NEW LOWER PRICE 219.95	299.95
	APS Q 840[3] Quantum 840 Trailblazer mechanism	811MB	NEW LOWER PRICE 249.95	349.95
	APS Q 1080[3] Quantum 1080 Fireball mechanism	1042MB	389.95	489.95
	APS MS 1.0[5] Micropolis 4210 Mechanism	1001MB	NEW LOWER PRICE 549.95	649.95
MacUser ZD LABS 3½	APS ST 1.0[5] Seagate ST 31230N Hawk mechanism	1010MB	NEW LOWER PRICE 499.95	599.95
MacUser ZD LABS 3½	APS Q 1.0[5] Quantum Atlas XP31070 mechanism	1025MB	699.95	799.95

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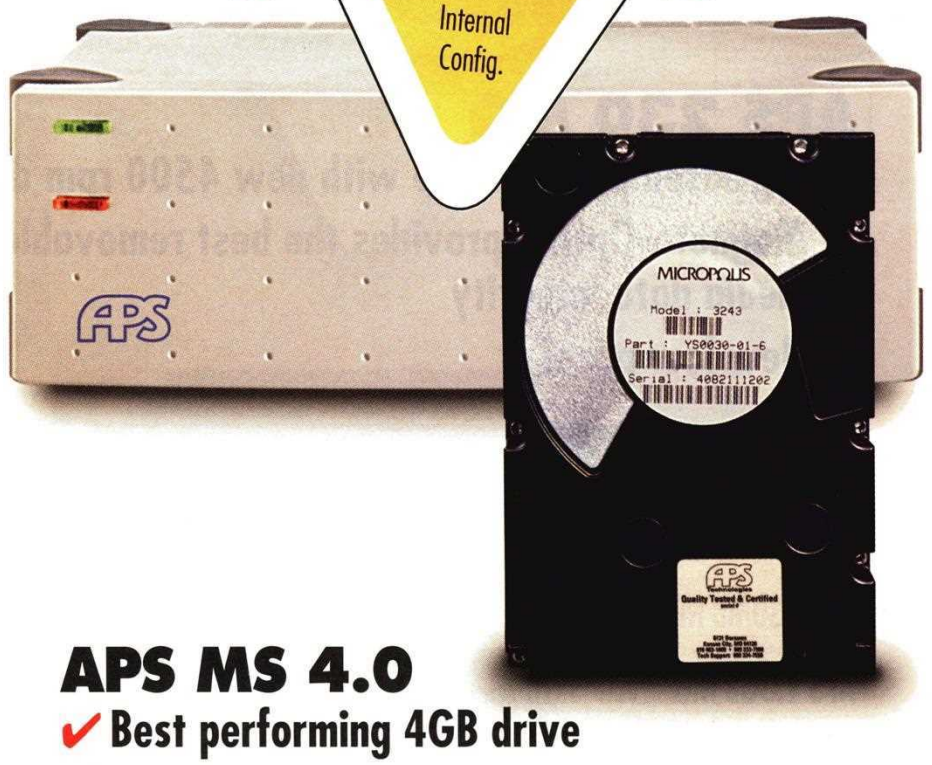
HIGH-CAPACITY DRIVES

Model	Capacity		Internal	SR2000
APS MS 2.0[5] Micropolis 4221 mechanism	1955MB		$899.95	$999.95
APS MS 2.0AV[5] Micropolis 4221AV mechanism	1955MB		999.95	1099.95
APS ST 2.0[5] Seagate ST 32550N Barracuda	2047MB		999.95	1099.95
APS Q 2.0[5] Quantum Atlas XP32150 mechanism	2050MB	NEW LOWER PRICE	899.95	999.95
APS MS 4.0[5] Micropolis 3243 mechanism	4064MB	NEW LOWER PRICE	1299.95	1399.95
APS MS 4.0AV[5] Micropolis 3243AV mechanism	4064MB	NEW LOWER PRICE	1399.95	1499.95
APS ST 4.0[5] Seagate ST 15150N mechanism	4094MB		1499.95	1599.95
APS Q 4.0[5] Quantum Atlas XP34300 mechanism	4101MB		1399.95	1499.95
APS MS 9.0[5] Micropolis 1991 mechanism	8669MB	NEW LOWER PRICE	2199.95	✻2399.95
APS MS 9.0AV[5] Micropolis 1991AV mechanism	8669MB	NEW LOWER PRICE	2299.95	✻2499.95
APS ST 9.0[5] Seagate ST410800N mechanism	8669MB	NEW LOWER PRICE	2299.95	✻2499.95

4.0GB APS MS 4.0

$1,299.95

Internal Config.



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- ✔ Optimized for workstations and servers
- ✔ Terrific price/performance value
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Model	Capacity	RAID Level	Price
ARRAID S2/5400[5]	2GB	0 (Striped)	$1299.95
ARRAID M1/7200[5]	1GB	1 (Mirrored)	1599.95
ARRAID S2/7200[5]	2GB	0 (Striped)	1599.95
ARRAID M2/7200[5]	2GB	1 (Mirrored)	2399.95
ARRAID S4/7200[5]	4GB	0 (Striped)	NEW LOWER PRICE 1999.95
ARRAID S8/7200[5]	8GB	0 (Striped)	3299.95
ARRAID 58/7200[5]	8GB	NEW FROM APS 5 (Parity)	4999.95

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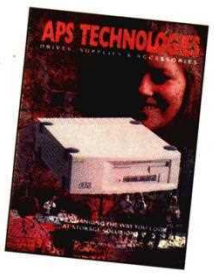

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APS MO DRIVES		
Model		**SR2000**
MacUser ZD LABS ★★★★ **APS 230MB MO**[2] *New Lower Pricing!*	NEW LOWER PRICE	$499.95
APS 1.3GB MO[1] *New 4MB cache*	NEW LOWER PRICE, NEW FROM APS	1699.95

1-5 Denotes length of manufacturer's warranty in years

Sony MO Media	*1-4*	*5-9*	BEST VALUE! *10+*
128MB cartridge	*$28.95*	*$26.95*	*$24.95*
230MB cartridge	*38.95*	*36.95*	*34.95*
1.3GB cartridge	*88.95*	*86.95*	*84.95*

APS SYQUEST DRIVES				
Model			**Capacity**	**SR2000**
MacUser ZD LABS ★★★★ **APS SQ 3270**[2]		NEW LOWER PRICE	255MB	$399.95
MacUser ZD LABS ★★★★½ **APS SQ 5200**[2]	MacUser RECOMMENDS	NEW LOWER PRICE	194MB	389.95

1-5 Denotes length of manufacturer's warranty in years

SyQuest Media	*1-4*	*5-9*	BEST VALUE! *10+*
SQ-400 (44MB)	*$42.95*	*$41.95*	*$39.95*
SQ-800 (88MB)	*48.95*	*47.95*	*45.95*
SQ-2000 (200MB)	*75.95*	*74.95*	*72.95*
SQ-310 (105MB)	*55.95*	*54.95*	*52.95*
SQ-327 (270MB)	*62.95*	*61.95*	*59.95*

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– MacUser September 1995

$349.95
External configuration

APS CD-ROM DRIVES		
Model		**SR2000**
MacUser ZD LABS ★★★★½ **APS T 3601**[1]	QUAD-SPEED	$349.95

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APS DAT
$699.95
External Config.

Retrospect

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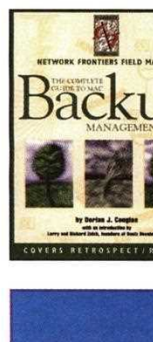

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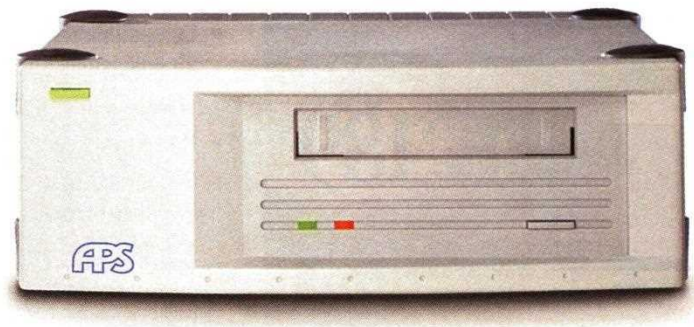

APS HyperDAT

- ✔ DDS-2 technology
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- ✔ Transfer rates up to 28MB per minute
- ✔ Includes Retrospect v 2.1 FREE!
- ✔ 2-year warranty

$999.95 External configuration

TAPE DRIVES			
Model	Capacity	Internal	SR2000
APS HyperTape[2]	2GB◆	—	$499.95
APS DAT[2]	2GB◆	NEW FROM APS $649.95	699.95
APS ProDAT[2]	4GB◆	849.95	899.95
APS HyperDAT[2]	8GB†	949.95	999.95
APS DLT40[2]	40GB†	NEW FROM APS —	5999.95

*Actual data compression and tape capacity vary greatly depending on the type of data recorded, other system parameters and environment.
† 2:1 Hardware data compression.
◆Native capacity without data compression.

All APS DAT, DLT & HyperTape drives include Retrospect by Dantz

Tape Media	*1-4*	*5-9*	BEST VALUE! *10+*
3080XLF (HyperTape) Sony	*$34.95*	*$33.95*	*$31.95*
60-Meter 3M	*8.95*	*7.95*	*6.95*
90-Meter 3M	*9.95*	*8.95*	*7.95*
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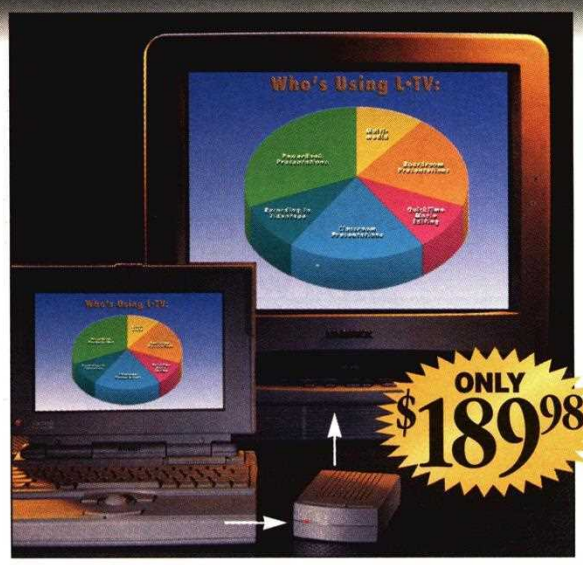

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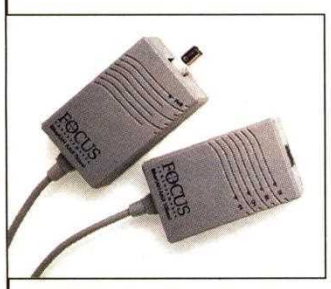

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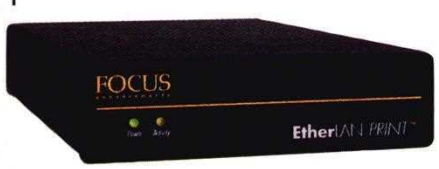
Mac II (NuBus)	EtherLAN II-T	10Base-T	*#94207*	$79.98
Mac II (NuBus)	EtherLAN A1-II	ThickThin/10Base-T	*#94208*	$104.98
Mac IIsi & SE30	EtherLAN A1-IIsi & SE30	Thick/Thin/10T	*#94209*	$169.98
Mac SE	EtherLAN A1-SE	Thick/Thin/10T	*#94210*	$164.98
Mac LC	EtherLAN LC	Thin	*#94211*	$79.98
Mac LC	EtherLAN LC-T	10Base-T	*#94212*	$74.98
Mac LC	EtherLAN A1-LC	Thin/10Base-T	*#94213*	$104.98
All Macs w/SCSI	EtherLAN SC	Thin	*#90828*	$199.98
All Macs w/SCSI	EtherLAN SC-T	10Base-T	*#90829*	$199.98
All Macs w/SCSI	EtherLAN Mini-SC	Thin/10Base-T	*#90830*	$219.98



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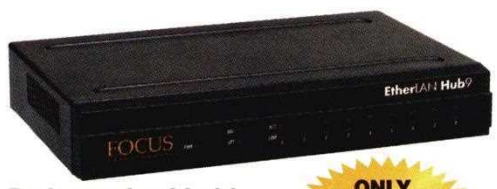
#94205 **EtherLAN Print Plus $344.98**



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- 21" diagonal flat square technology
- 13.8" Viewable image size
- Mac Res: 640 x 480 NI, 1024 x 768 NI
- Fine 0.28mm dot pitch
- Monitor Manager
- AccuColor, Digital controls
- Energy star compliant for true energy savings

21" Monitor

$1829

21" XE21 (N026 1010) $1829
21" XP21 (N026 1011) 2199

15" MultiSync XV15

Outstanding performance at an affordable price

- Larger sharper images that are easier to use
- Plug and Polay compatible for real performance advantages
- Energy star compliant for true energy savings
- 15" diagonal flat square technology
- 13.8" Viewable image size
- Mac Res: 1024 x 768 NI
- Fine 0.28mm dot pitch

15" Monitor

$399*

14" XV14 (N026 1016) $319
15" XV15 (N026 1015) $399*
15" XE15 (N026 1006) $549
15" XP15 (N026 1005) 599

* After $25 Rebate

17" MultiSync XV17

Large Screen performance at an affordable price

- Perfect entry level business, small office/home office, home ducation/entertainment
- 17" diagonal flat square technology
- 15.6" Viewable image size
- Mac Res: 1024 x 768 NI
- PC Res: 1280 x 1024 NI
- Fine 0.28mm dot pitch
- FullScan capability
- On-Screen Manager

17" Monitor

$759

17" XV17 (N026 1022) $759
17" XP17 (N026 1009) 1049

IntelliColor Display/20e

The Radius IntelliColor Display/20e is part of the next generation in professional two-page color displays. It delivers unrivaled command of your desktop, from on-the-fly resolution switching to state-of-the-art color temperature control. Combined with Radius' IntelliColor software, it allows you to emulate 3 lighting conditions and user-adjustable color temperature, so you get more accurate color representation.

$1899

MONITORS

R016 1013 **PressView 21T Display System** (PV2102) 21" Trinitron, 640 x 480 to 1600 x 1200 ... $3099
R016 1016 **SuperMatch 21•T XL Trinitron** (STD2102) 21" Trinitron, 1600 x 1200 ... $2075
R016 1009 **IntelliColor Display/20e** (0461) 20" Trinitron, 640 x 480 to 1600 x 1200 ... $1899
R016 1007 **PrecisionColor Display/17** (0460) 17" Trinitron, 640 x 480 to 1600 x 1200 ... $959
R016 1030 **PrecisionView 17** (RD1705) 17" Trinitron, 1024 x 769 ... $899

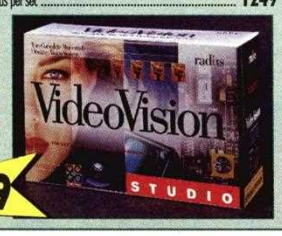
VideoVision Studio 2.0

With JPEG hardware compression and decompression for full-screen, full-motion recording and playback from a hard disk, VideoVision Studio combines the power and flexibility of the Macintosh with the ease and transportability of video tape.

R013 1018 **VideoVision Studio 2.0** (0500) Compatible with the PowerMac 8100 ... $3699
R013 1020 **VideoVision Studio 2.0** Upgrade (0505) JPEG daughtercard ... $1759
R013 1026 **SpigotPower AV** (DV1630) Captures full-screen 24-bit color video up to 30 frames/60 fields per sec ... $759
R013 1065 **SpigotPro AV** (0514) captures full-screen 24-bit color video up to 30 frames/60 fields per sec ... $1249

PowerMac 8100 Compatible!

$3699



Thunder Series GRAPHIC ACCELERATORS

Super Resolution at Earth-Shaking Speed.

radius

Thunder Series Cards Blow the doors off Power Mac

FREE* ColorComposer software

Adobe charged

Three Thunder IV GX cards extend the 24-bit resolution of the PowerMac's built-in-video. Accelerated 24-bit color, built-in Photoshop acceleration, CMYK acceleration, hot-key resolution switching, pan and zoom, color composer and 10-bit DAC add up to make these cards the number one choice for image processing, compositing and illustration.

PowerMac 9500 Compatible PCI Cards NEW PRODUCT

R013 1069 **PrecisionColor 8/1600** (0529) 8-bit support to 1600 x 1200 ... $479
R013 1071 **Thunder 30/1600** (0528) 24-bit support to 1600 x 1200 ... $1149
R013 1070 **Thunder 30/1152** (0538) 24-bit support 1152 x 870 ... $759
R013 1073 **ThunderColor 30/1600** (0530) 24-bit support to 1600 x 1200 ... $1999
R013 1072 **ThunderColor 30/1152** (0531) 24-bit support 1152 x 870 ... $1599

R013 1059 **Thunder IV GX•1600** (0513) 24-bit support to 1600 x 1200 ... $2799
R013 1060 **Thunder IV GX•1360** (0446) 24-bit support to 1360 x 1024 ... $2289
R013 1061 **Thunder IV GX•1152** (0485) 24-bit support 1152 x 870 ... $1899
R013 1062 **Thunder/24 GT** (0491) 24-bit support to 1152 x 870, PhotoEngine optional ... $1329
R013 1008 **PrecisionColor Pro 24X** (0429) 24-bit color, 640 x 480 to 1152 x 870, 13" to 21" displays ... $1059
R013 1010 **PrecisionColor Pro 24XK** (0430) 24-bit color, 1024 x 768, 16" and larger displays ... $749

*For a limited time, FREE ColorComposer software is included with each Thunder Series card.

PRINTERS & SCANNERS

EPSON

Epson ES-1200C Pro Mac Scanning System

HIGH DETAIL 4800 DPI, 30-BIT COLOR SCANNING MADE AFFORDABLE.

- 600 x 1200 dpi scanning resolution (up to 4800 dpi via interpolation)
- Epson's TruePass scanning technology
- Scans over ONE BILLION colors
- 8.5" x 11.67" scanning area
- Built-in image processing features
- Increased image quality with 30-bit color scanning

2 Year Warranty

MacUser Editors' Choice Award 1994 Winner

$1269

E045 1003 **Epson ES-1200C Pro-MAC** ... $1269
E045 1013 **Epson ES-1000C Pro-MAC** ... $779
E045 1004 **Transparency Unit** ... $655
E045 1008 **Automatic Document Feeder** ... $465

EPSON Stylus COLOR Inkjet Printer

E047 1012

Now you can print in vivid color with clarity never before possible in a personal color printer. At 360 dpi resolution blacks are blacker and at 720/360 dpi the color output is the sharpest available.

- Incredible 720 dpi color printing, optimized with special coated paper
- 360 dpi black print resolution
- Prints up to 16 million colors
- Serial interface
- Includes Mac driver software and a TWO Year Warranty

MacUser Editors' Choice Award 1994 Finalist

MacWorld MW ★★★★

$529

ACCELERATORS

IN STOCK!

DAYSTAR DIGITAL

100 MHz Turbo 601

100MHz

$1499

Compatible with Mac IIci, IIsi, IIvx, and Performa 600

DayStar PowerPC Upgradable

The Turbo 601 provides the best of both worlds. The Turbo 601 allows you to run your current software up to twice as fast, and it lets your run powerPC accellerated applications at full PowerPC speed - from 7 to 11 times faster!

DayStar 100 MHz Turbo 601 ... $1499
Compatible with Mac IIci (D040 1048), IIsi (D040 1050), IIvx/vi/Performa 600 (D040 1052)

DayStar 100 MHz PowerPro 601 (D040 1043) ... $1539
Compatible with Quadra 900/950, 700 and other with Quadra style PDS

DayStar 66 MHz Turbo 601 ... $989
Compatible with Mac IIci (D040 1039), IIsi (D040 1049), IIvx/vi/Performa 600 (D040 1051)

DayStar 66 MHz PowerCard 601 (D040 1040) ... $635

DayStar Turbo '040 (D040 1018) ... $769

3 Year Warranty

30 Day Money Back Guarantee

100% Compatible

PAPERPORT

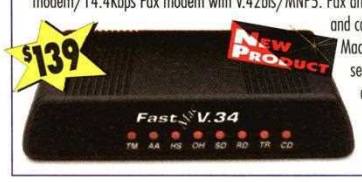
FAST MAC V.34 FAX AND DATA MODEM

NEW! *FAST MAC V.34* 28.8Kbps External MODEM. 28.8Kbps data modem/14.4Kbps Fax modem with V.42bis/MNP5. Fax and data software and cable for the Macintosh, on-line services, power adapter and telephone cable included.

B030 1007

$139

NEW PRODUCT



$359

VISIONEER

PAPERPORT

The fastest way to get paper into your Mac.

If it's on paper, it's PaperPort-able!

MacWorld MW ★★★★★

The simple, super-small input device that converts your paper documents into electronic ones. With PaperPort's direct links to word processors, OCR software (included!), printers and fax modems, you can file, edit, annotate, print and send your documents directly to others. (V025 1002)

Editors' Choice Award 1994 Finalist

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CLUBMAC IS DOING IT AGAIN!

Once again, the first 1000 ClubMac SyQuest 200MB External SubSystems sold will include TWO 200MB Genuine SyQuest cartridges. **OVER A $75.00 SAVINGS!**

TWO FREE CARTRIDGES LIMITED SUPPLY

ClubMac 5.25" 200MB Removable

$468

C109 1090

Read, Write and FORMAT Compatible with 200MB, 88MB, and 44MB Cartridges.

FEATURING SyQuest REMOVABLE TECHNOLOGY

MacUser February 1995

SyQuest 5 YEAR Warranty* ON CARTRIDGES

NOW SHIPPING WITH ACTIVE TERMINATION

Mac™OS COMPATIBLE

C109 1090	**5.25" ClubMac 200MB**	includes Two FREE Formatted 200MB Cartridge (Limited Supply) $468
C109 1002	**5.25" ClubMac 88MB**	includes One FREE Formatted 88MB Cartridge $349

GENUINE SYQUEST CARTRIDGES

Part Number	Media	Qty 1	Qty 10	Qty 20
S198 1010	44MB	$43ea	$42ea	$41ea
S198 1011	88MB	$48ea	$47ea	$46ea
S198 1012	200MB	$76ea	$74ea	$72ea
S198 1013	105MB	$51ea	$50ea	$49ea
S198 1014	270MB	$62ea	$61ea	$60ea

* Warranty after first year, handled by SyQuest.

While Supplies Last!

ZIP KILLER 105MB

ClubMac 3.5" 105MB Removable

$199

C109 1005

NOW SHIPPING WITH ACTIVE TERMINATION

FREE CARTRIDGE

- Fast 14.5ms average seek time
- 3,600 RPM rotational speed
- Data transfer rate up to 4MB/sec (sync)
- 105 Cartridge is compatible with 270 SyQuest Drive
- IN STOCK NOW!

Mac™OS COMPATIBLE

C109 1005	**3.5" ClubMac 105MB**	includes FREE Formatted 105MB Cartridge $199
C109 1004	**3.5" ClubMac 270MB**	includes FREE Formatted 270MB Cartridge $468

All SyQuest drives include SCSI Director formatting software, ONE FREE Formatted Cartridge, necessary cables for "plug-and-play" and documentation. All SyQuest drives include a 30-Day Money Back Guarantee and TWO Year Warranty. All SyQuest cartridges include a FIVE Year Warranty (warranty after the first year is handled by SyQuest).

DAT AND OPTICAL STORAGE DEVICES

ClubMac Tape Backup Drives

C109 5011

$699

BUNDLED WITH Retrospect v2.1 Backup Software

DDS-1 2.0GB

DDS-2 4-8GB

$899

C109 5010

NOW SHIPPING WITH ACTIVE TERMINATION

Mac™OS COMPATIBLE

FREE DAT TAPE One Year Warranty

Verbatim

SONY

DAT MEDIA

V010 1018	Verbatim 90M Cartridge	$12
S100 1012	Sony 90M Cartridge	$12
V010 1043	Verbatim 120M Cartridge	$29
S104 1008	Sony 120M Cartridge	$29

OPTICAL MEDIA

V010 1021	Verbatim 1.3GB Optical Cartridge	$85
S100 1005	Sony 1.3GB Optical Cartridge	$85
V010 1012	Verbatim 230MB Optical Cartridge	$39
S100 1008	Sony 230MB Optical Cartridge	$39

ClubMac 5.25" OLYMPUS 1.3GB

- 5.25" Olympus Optical Mechanism
- 29ms ave. seek time
- 3,500 RPM rotational speed

1.3GB

$1499

C109 5022

Mac™OS COMPATIBLE

NOW SHIPPING WITH ACTIVE TERMINATION

CLUBMAC 3.5" OLYMPUS 230MB

- 3.5" Olympus Optical Mechanism
- 28ms ave. seek time
- 4,200 RPM rotational speed

230MB

C109 5020

$579

MacUser RATED February 1995

SUMMER SALE!

CLUBMAC HARD DRIVE STORAGE

2.5" 514MB $375

Interna
Q030 1002

2.5" DAYTONA DRIVES

341MB Daytona	17ms	Q030 1041	$299	C109 1119	$419
514MB Daytona	17ms	Q030 1002	$375	C109 1109	$495

Internal Grand Prix
C109 1159

$1149

Mac OS COMPATIBLE

NOW SHIPPING WITH ACTIVE TERMINATION

Backed by ClubMac's 30 DAY Money Back Guarantee

Incredibly Low Price

QUANTUM GRANDPRIX

4.3GB

7200 RPM

Internal Fireball
C109 1202

$389

Quantum

365MB

1.0GB

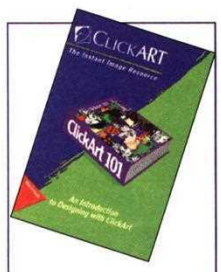
Internal Lightning
C109 1220

$139

Backed by ClubMac's 30 DAY Money Back Guarantee

NOW SHIPPING WITH ACTIVE TERMINATION

Mac OS COMPATIBLE



T/Maker ClickArt FREE

With the purchase of a Quantum 365 Lightning Drive (Internal or External)

	Part No.	Internal	Part No.	External
1080MB Fireball 12ms	C109 1202	$389	C109 1203	$449
2200MB Capella 8.5ms	C109 1213	$799	C109 1212	$859
4300MB Grand Prix 8.6ms	C109 1159	$1149	C109 1108	$1209
4300MB Atlas 8ms	C109 1122	$1499	C109 1121	$1559

	Part No.	Internal	Part No.	External
365MB Lightning 11ms	C109 1220	$139	C109 1219	$199
420MB Trailblazer 14ms	C109 1204	$185	C109 1205	$245
540MB Fireball 12ms	C109 1200	$199	C109 1201	$259
730MB Lightning 11ms	C109 1154	$229	C109 1102	$289

3.5" HALF HEIGHT & LOW PROFILE (LP)

Unformatted Capacity	Model	Description	Part No.	Internal	Part No.	External
2.4GB	32430N	Hawk 2 LP	C109 2211	$899	C109 2112	$959
4.3GB	15230N	Hawk 4	C109 2212	$1099	C109 2113	$1159
2.5GB	32550N	Barracuda 2 LP	C109 2203	$1069	C109 2109	$1129
4.3GB	15150N	Barracuda 4	C109 2207	$1499	C109 2106	$1559

5.25" FULL HEIGHT

9.1GB	410800N	Elite-9			C109 2110	$2599

Seagate 5 YEAR Warranty

Mac OS COMPATIBLE

NOW SHIPPING WITH ACTIVE TERMINATION

BARRACUDA 4

8.5ms average seek time

Backed by ClubMac's 30 DAY Money Back Guarantee

Seagate

4.3GB

7,200 RPM

$1559

CLUBMAC CD-ROM DRIVES

ClubMac 2X CD-ROM

- 300KB/sec data transfer rate
- 350ms average access time
- Flip Top Lid
- LED light, headphone jack
- Volume control
- Light weight
- CharisMac's CD AutoCache driver software
- ONE Year Warranty

$99

Mac OS COMPATIBLE

ClubMac NEW PRODUCT

C109 9550

ClubMac 2X CD-ROM

- 300KB/sec data transfer rate
- 320ms average access time
- Caddy-less design
- LED light, headphone jack and RCA jacks
- CharisMac's CD AutoCache driver software
- ONE Year Warranty

$129

Mac OS COMPATIBLE

C109 9543

ClubMac 4X CD-ROM

- 600KB/sec data transfer rate
- 190ms average access time
- Caddy-less design
- LED light, headphone jack and RCA jacks
- CharisMac's CD AutoCache driver software
- ONE Year Warranty

$229

Mac OS COMPATIBLE

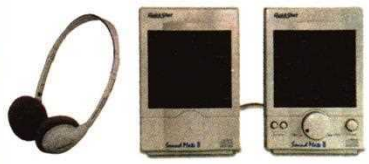
C109 9546

CD-ROM BUNDLE C109 1015

- Grolier1995 Multimedia Encyclopedia
- U.S. Atlas & World Atlas
- San Diego Zoo Animals
- Wyatt Earp
- QuickShot speakers & Koss Headphones

(5 Titles/4 CDs)

CLUBMAC CD-ROM BUNDLE $100*



** with any CD-ROM Drive purchase*

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Portrait Display Labs

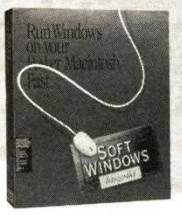
Portrait Display Labs Pivot 1700™
17" Multi-frequency color display offers portrait or landscape view mode.

$949

NEC

NEC MultiSync® XV17™ Color Display
17", .28mm dp, 1024 x 768

$749



Insignia SoftWindows™ 2.0 CD for Power Mac
A complete IBM-compatible PC in software that enables Power Macintosh users to run all Windows and MS-DOS applications. Windows 95 compatible.

$289

Great Rebates from Radius!

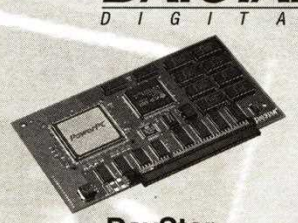
- *Purchase Radius VideoVision® Studio & receive a $750 REBATE*
- *Purchase a Radius MultiView™ 21 and a PrecisionColor Pro™ 24x & receive a $100 REBATE*
- *Or a PrecisionView® 21 and a Thunder™ IV 1152 & receive a $200 REBATE*
- *Or a PressView™ 21SR and a Thunder IV 1600 & receive a $400 REBATE*

VISIONEER

PaperPort™ Scanner
This super-small input device scans important articles, letters, receipts & business cards right into your computer. Comes with OCR software.

$359

DAYSTAR DIGITAL



DayStar PowerPro™ 601 100MHz
This PowerPC Upgrade plugs into any Quadra 650,700,800,900,and 950. Can be upgraded to 128MB.

$1549

MACWORLD EXPOSITION

Booth #5646

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MACWORLD EXPOSITION
THE WORLD TRADE CENTER,
BOSTON
AUGUST 8 - 11, 1995

Monitors

Radius PrecisionView Color Display ***$889***
17" Trinitron®, 1024 x 768 resolution.

Radius MultiView 21 ..... ***$1749***
21"; 1600 x 1200 dpi.EnergyStar compliant.

Radius IntelliColor Display/20e™ ***$1899***
20" Trinitron, 1600 x 1200; EnergyStar compliant.

Radius PrecisionColor™ Display/17 ..... ***$969***
17" Trinitron, 1152 x 870 resolution.

Radius PrecisionView 21 ..... ***$2199***
21" color display, 1600 x 1200 resolution.

Radius PressView 21SR ***$3049***
21" DiamondTron color display, 1600 x 1200 resolution.

Ask about special Radius pricing for educational institutions.

NEC MultiSync® XV14/XV15™ ..... ***$319 / $439***
NEC MultiSync XE15/XP15™ ..... ***$549 / $649***
NEC MultiSync XE17/XV17™ ..... ***$995 / $749***
NEC MultiSync XE21/XP21™ ..... ***$1799 / $2199***

Scanners

UMAX Vista-T630LE Color Scanner ***$399***
4800 dpi (through software), 24-bit color scanner. Adobe Photoshop LE, & Wordlinx OCR Software.

UMAX UC1260 Color Scanner ***$849***
9600 dpi (through software), 24-bit color scanner. Adobe Photoshop, Kai's Power Tools SE, KPT Power Photos CD, Pixar Typestry & 128 Textures CD.

Printers

HP LaserJet 5MP Printer ***$1039***
600 x 300 dpi; 6 ppm print speed.

HP DeskJet 660C/PS Printer ***$479***
600 x 300 dpi; 4 ppm print speed.

PCI Cards

Radius PrecisionColor 8/1600 ..... ***$469***
Radius Thunder 30/1152 ..... ***$769***
Radius Thunder 30/1600 ..... ***$1149***
Radius ThunderColor™ 30/1152 ..... ***$1549***
Radius ThunderColor 30/1600 ..... ***$1949***

Modems

SupraFAXModem™ 288 ..... ***$215***
SupraExpress™ 144 Plus ***$99***
Global Village TelePort Gold™ II ***$109***
Global Village TelePort Platinum™ ***$229***
Global Village PowerPort Gold™ ***$189***
For PowerBook 100 Series

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Storage

Iomega Zip Drive ***$199***
540MB Quantum™ External Hard Drive ***$289***
Includes FWB ToolKit, cable & terminator.
NEC MultiSpin® 6Xe CD-ROM Drive ***$549***
Pinnacle Micro Tahoe 230MB Optical Drive ***$769***

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- **No out of state sales tax collected**
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- **Corporate & Government PO's welcomed**
- **Quick Quotes- Quotes by fax in10 minutes or less**

CD ROM Drives

Chinon CDA525 — 135/195
280ms access time, 300Kb/sec transfer rate,256K,1 Year Warranty

SONY CDU55 — 235/275
280ms access time, 300Kb/sec transfer rate

NEC 3Xp — na/398
240ms access time, 500Kb/sec transfer rate, 1 Year Warranty

Sanyo QuadSpeed — 240/280
220ms access time, 500Kb/sec transfer rate, 1 Year Warranty

Toshiba QuadSpeed — 340/380
120ms access time, 600Kb/sec transfer rate, 256K,1 Year Warranty

NEC 6Xe — na/595
220ms access time, 600Kb/sec transfer rate,256K,1 Year Warranty

Plextor 4Plex — 385/425
235ms access time, 600Kb/sec transfer rate, 256K,1 Year Warranty

Plextor 6Plex — 555/615
235ms access time, 600Kb/sec transfer rate, 256K,1 Year Warranty

Kingston TECHNOLOGY CORPORATION

Removable Drive Carriers

- **Provides ability to easily remove and transport data**
- **Ideal for disk array environments**
- **Compatible with single ended, narrow differential, or fast & wide SCSI disk drives**
- **SCSI ID select number is clearly displayed on front panel of the receiving frame**
- **Key locked to prevent unauthorized or untimley removal of the drive carrier**
- **5 year warranty**

"Kingston Data Silo's are ideal for enclosing 5.25" and 3.5" storage devices, including disks, tapes, DATs or optical drives for external SCSI expansion". Kingston Technology Corp.1994

Digital Linear Tape Drives

Quantum DLT

Model	Capacity	Trans.Rate	Media	Ext.
DLT2000x	30 GB	2.5MB/sec.	DLT20	$5350
DLT4000	40 GB	3.0MB/sec.	DLT40	$6350

1 free cartridge with each DLT purchase

These drives are ideal for AV and network backup due to their advanced linear recording technology and a highly accurate tape guide system . DLT allows you to backup 150 to 180 MB per minute. DLT is your high capacity high performance backup solution.

Optical Drives

	Capacity		Access	Warranty	Ext.
Hewlett Packard	1.3 GB	1716T	23.5ms	1 Year	2295
MaxOptics	1.3 GB	Tahitti III	18ms	1Year	2395
Fujitsu	230 MB	M2512	30ms	1Year	575

1 free cartridge with each drive purchase

Hard Drive Cabinets

Zero Footprint 10.75" x 9.75" x 2"..... $75
MicroCab 8.5" x 6.75" x 2"..... $85
Full Height 9.75" x 9.5" x 4.5"..... $135
Multi Bay Cabinets..... $CALL
Two, four, six, and eight bay cabinets available. All cabinets come with a 25-50 pin Mac system cable and a power cable. 1 year warranty on all cabinets.

Scanners

Nikon	Scantouch	$1299
	Transparency Adapter	$599
	Coolscan	$1499
UMAX	UC630/1260	$675/1240
	Vista S6	$760
	Powerlook	$3250

All prices are subject to change without notice. Returned products are subject to a restocking fee. International customers pay all shipping charges. All shipping charges are non-refundable. To return merchandise call for an RMA number. All RMAs must be returned within 10 business days of issuance. Customers are responsible for all returned product shipping charges.

VISA MasterCard

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NEW Quantum Quantum Quantum

	Capacity	Seek	RPM	Cache	Warranty	Int.	Ext.
Lightning	365 MB	11 ms	4500	128K	2 Year	135	195
Trailblazer	420 MB	14 ms	4500	128K	3 Year	180	240
DSP3053	535 MB	9 ms	5400	512K	5 Year	220	280
Maverick	540 MB	14 ms	3600	128K	2 Year	185	245
Fireball	540 MB	11 ms	5400	128K	3 Year	195	255
Lightning	730 MB	11 ms	5400	128K	2 Year	250	310
Trailblazer	850 MB	14 ms	4500	128K	3 Year	275	335
Fireball	1080 MB	11 ms	4500	128K	3 Year	390	450
Capella	2.0 GB	8.5ms	5400	1024K	5 Year	775	835
Atlas Series	2.0 GB	9ms	7200	1024K	5 Year	915	975
Grand Prix	4200 MB	8.6 ms	7200	512K	5 Year	1085	1145
Atlas Series	4.3 GB	9ms	7200	2048K	5 Year	1495	1555

	Capacity	Size	Seek	Cache	Warranty	Int.	Ext.
Daytona	256 MB	Powerbook 2..5"	17 ms	128K	1 Year	215	275
Daytona	341 MB	Powerbook 2..5"	17 ms	128K	1 Year	295	355
Daytona	514 MB	Powerbook 2..5"	17 ms	128K	1 Year	375	435

5 Year Advance Replacement

MICROPOLIS MICROPOLIS

	Capacity	Access	RPM	Cache	Warranty	Int.	Ext.
M4221	2.1 GB	8.5 ms	7200	512K	5 Year	890	950
M4221Wide	2.1 GB	8.5 ms	7200	512K	5 Year	1080	1140
M1936	3.6 GB	11 ms	5400	512K	5 Year	1195	1295
M3243	4.3 GB	8.5 ms	7200	512K	5 Year	1385	1465
M3243Wide	4.3 GB	8.5 ms	7200	512K	5 Year	1475	1535
M1991	9.0 GB	12 ms	5400	512K	5 Year	2190	2290
M1991Wide	9.0 GB	12 ms	5400	512K	5 Year	2295	2395

Direct to Disk Recording AV Drives- BEST for Music and Video Storage

M4221AV	2.1 GB	8.5 ms	7200	512K	5 Year	945	1005
M1936AV	3.6 GB	11 ms	5400	512K	5 Year	1245	1345
M3243AV	4.3 GB	8.5 ms	7200	512K	5 Year	1440	1500
M1991AV	9.0 GB	12 ms	5400	512K	5 Year	2240	2340
M4221WideAV	2.1 GB	8.5 ms	7200	512K	5 Year	1135	1195
M3243WideAV	4.3 GB	8.5 ms	7200	512K	5 Year	1595	1655
M1991WideAV	9.0 GB	12 ms	5400	512K	5 Year	2495	2595

NEW MICRODISK LT *3.5"Stackable Disk Subsystems, Super Capacity External Storage*

MDAV2100	2.1 GB	8.9 ms	7200	512K	5 Year	Call for the most
MDAV4300	4.3 GB	8.9 ms	7200	512K	5 Year	competitive pricing

SPRING SPECIALS

Quantum 365MB..... Int. $135 Ext. $195
Lightning 365, 4500RPM, 11ms seek, 128K cache, 2 year warranty

Quantum535MB..... Int. $220 Ext. $280
DSP3053, 5400RPM, 9ms seek, 512K cache, 5 year warranty

Quantum Trailblazer 850MB..... Int. $270 Ext. $330
QTB850, 4500RPM, 14ms seek, 128K cache, 3 year warranty

Quantum Fireball 1.0GB..... Int. $390 Ext. $450
QFB1080, 4500RPM, 11ms seek, 2 year warranty

Micropolis 2.0GB..... Int. $890 Ext. $950
M4221,7200RPM, 9ms seek, 5 year warranty

Seagate Barracuda 4.0GB..... Int. $1485 Ext. $1545
ST15150N, 7200RPM, 8ms seek, 5 year warranty

Micropolis 9.0GB..... Int. $2190 Ext. $2290
M1991, 5400RPM, 12ms seek, 512K cache, 5 year warranty

Seagate Seagate Seagate Seagate

	Capacity	Seek	RPM	Cache	Warranty	Int.	Ext.
Hawk 2LP	1.2 GB ST31230N	9ms	5400	512K	5 Year	515	575
Hawk 4	4.2 GB ST15230N	9ms	5400	512K	5 Year	1135	1195
Barracuda 2LP	2.5 GB ST32550N	8ms	7200	1024K	5 Year	1050	1110
Barracuda 4	4.2 GB ST15150N	8ms	7200	1024K	5 Year	1495	1555
Barracuda 2Wide	2.5 GB ST32550Wide	8ms	7200	1024K	5 Year	1125	1195
Barracuda 4Wide	4.2 GB ST15150Wide	8ms	7200	1024K	5 Year	1590	1650
Elite 9	9.0 GB ST410800N	11ms	5400	1024K	5 Year	2375	2475

FUJITSU FUJITSU FUJITSU FUJITSU FUJITSU FUJITSU

	Capacity	Seek	RPM	Cache	Warranty	Int.	Ext.
M2684	530 MB	9ms	4500	256K	3 Year	200	260
M1606SA	1.2 GB	9ms	4500	512K	3 Year	410	470

HEWLETT PACKARD HEWLETT PACKARD HEWLETT PACKARD HEWLETT PACKARD HEWLETT PACKARD

	Capacity	Access	RPM	Cache	Warranty	Int.	Ext.
C3784SE	1.2 GB	9.5 ms	5400	512K	5 Year	550	610
C3725E	2.4 GB	8.5 ms	6300	512K	5 Year	1075	1135

Lowest Prices! SyQuest TECHNOLOGY

Capacity	Seek	RPM	Int.	Ext.
88 MB SQ5110C	20 ms	3200	285	345
200 MB SQ5200	18 ms	3200	405	465
270 MB SQ3270	13.5 ms	3200	405	465

2 Year Warranty on all SyQuest Drives.
SyQuest drives come complete with 1 cartridge(Formatted or Unformatted) and the latest SCSI 4.3 compatible software

SyQuest TECHNOLOGY Media

Capacity	Model	Warranty	Price
44 MB	SQ400	5 year	$41
88 MB	SQ800	5 year	46
105 MB	SQ310	5 year	50
200 MB	SQ2000	5 year	74
270 MB	SQ327	5 year	61

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Atto

Silicon Express Fast SCSI-2 — 525
SCSI 1 & 2 support,transfer rates up to 10.0 MB/sec,supports multiple block sizes,takes advantage of parallel processing capability by transferring data directly between the Mac RAM and the SCSI bus! Ideal for graphic design,multimedia applications,software design, and more!

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Fast/Wide (16Bit) SCSI-2 accelerator card for Apple's Nubus based computers. Supports Fast/Wide SCSI 2 (16 Bit) transfer rates up to 20MB/sec., and fast SCSI-2 (8 Bit) transfer rates up to 10MB/sec. Full 16 Bit WIDE support for the latest drives and disk arrays . Fully compatible with all existing SCSI-1 drives . Formatting software is included. 5 Year Warranty.

Remus RAID Software — Call

Tape Backup Drives

HEWLETT PACKARD

Capacity	Model	Media	Int.	Ext.
2.0 GB	35470	4mm	$935	$985
3-5 GB	35480	4mm	1105	1150
4-10 GB	1533A	4mm	1235	1295
20-50 GB	1553A Auto Tape Loader		3495	3595

Exabyte

Capacity	Model	Media	Int.	Ext.
2-5 GB	8205XL	8mm	$1395	$1485
7-14 GB	8505XL	8mm	2130	2190

Dat drives include 1 piece of media and Retrospect Software

DeskTape™ Allows you to mount your DAT on the desktop. Backing up your data is as easy as drag and drop!

ProDirect always suggests that our customers backup their hard drives. In the event of hard drive failure, be assured and back up your data with quality tape backup drives from Hewlett Packard and Exabyte.

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4x8x80 60/70ns	8MB 60/70ns
4x8x80 FX	16MB 70ns
16x8x80 Low Profile	32MB 60ns
16x8x80 FX	VRAM 256K/512K

Powerbook Memory
520,520C,540,540C
4MB,8MB,16MB,32MB
140,170,160,165C,180,180C,Duos
4MB,6MB,8MB,10MB, 12MB,14MB,20MB

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4 X 8 X 70NS II/IIX UPGRADE	151
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RUMI 270MB EXT/INT	279/219
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media HABITAT

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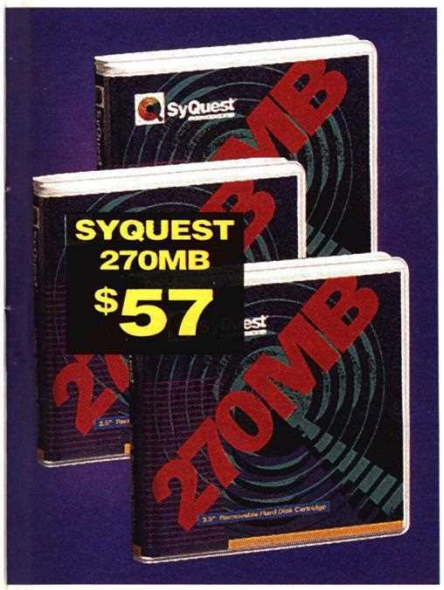

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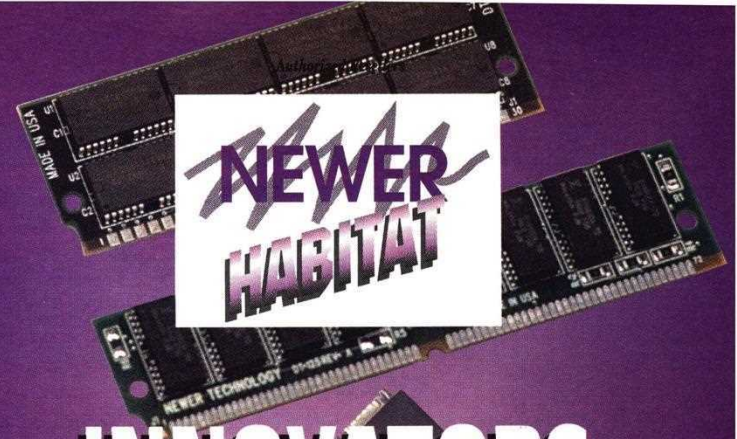

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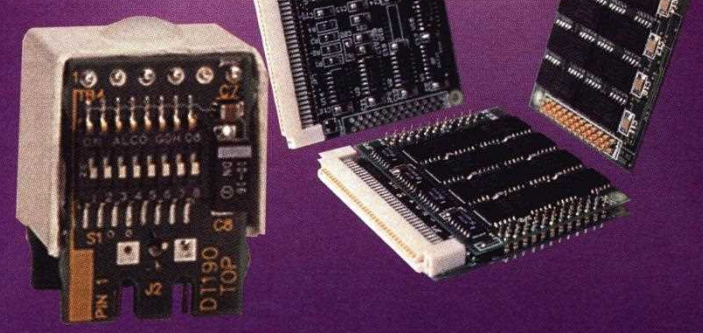

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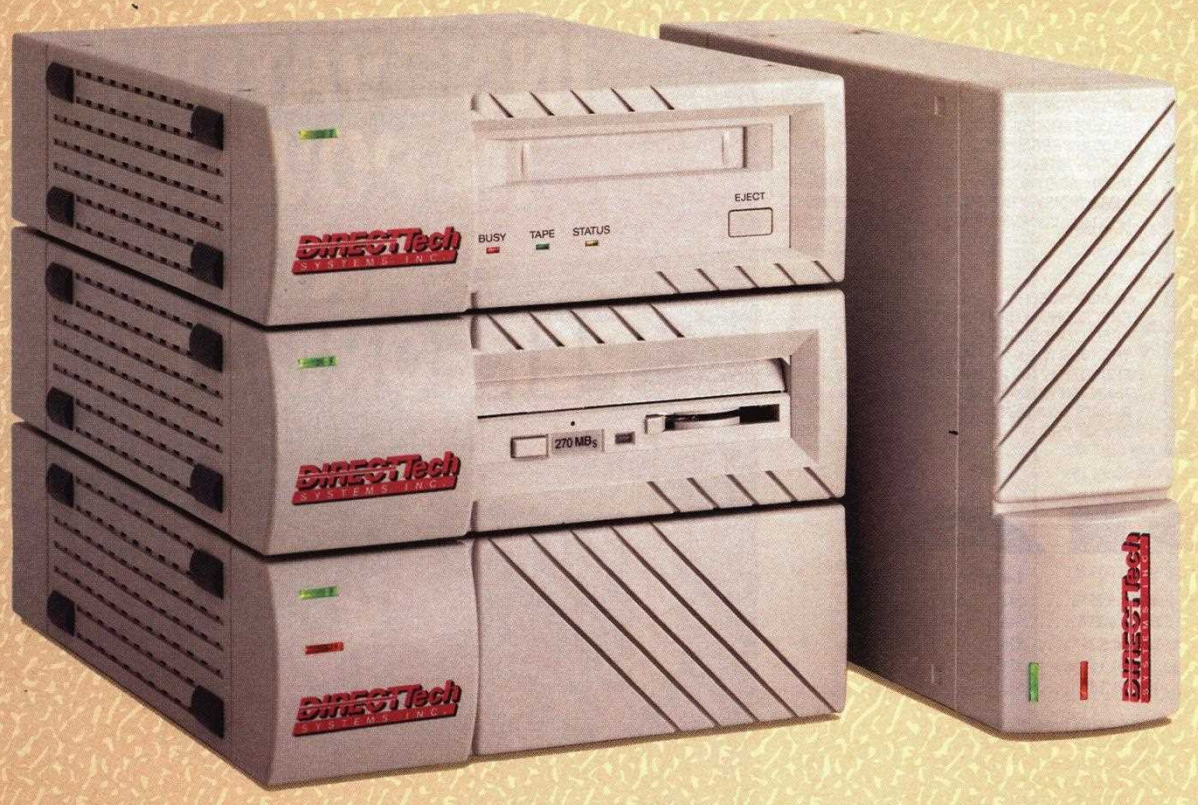

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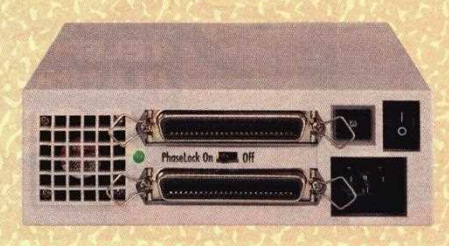

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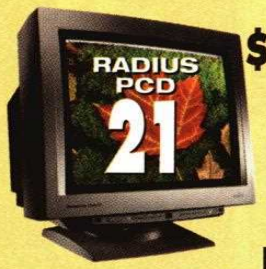

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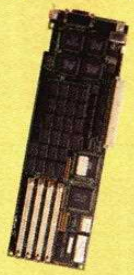

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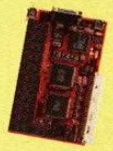

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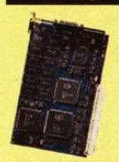

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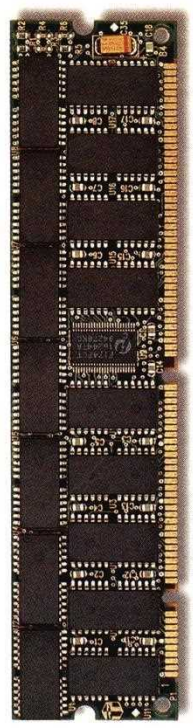

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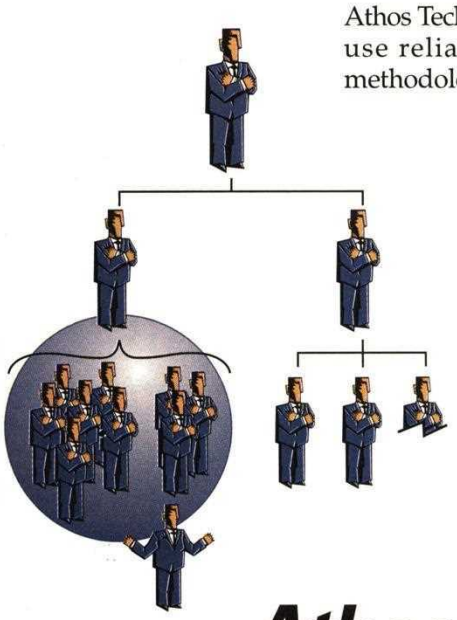

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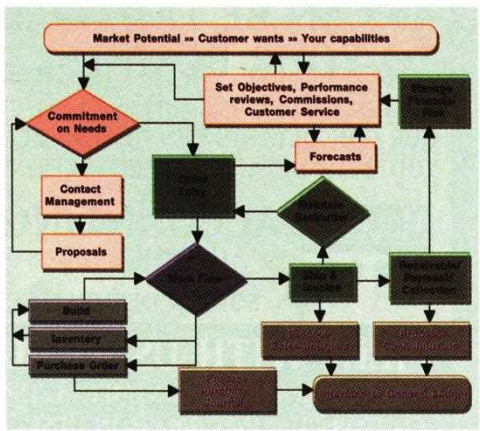

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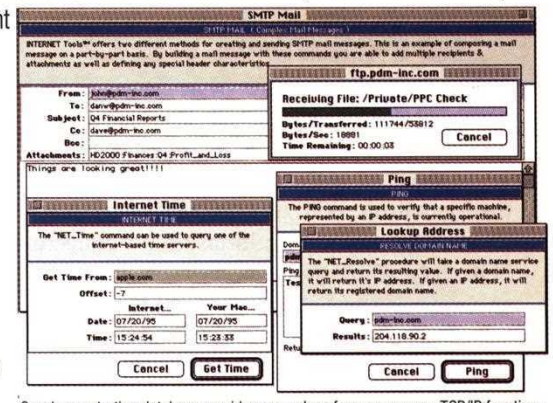

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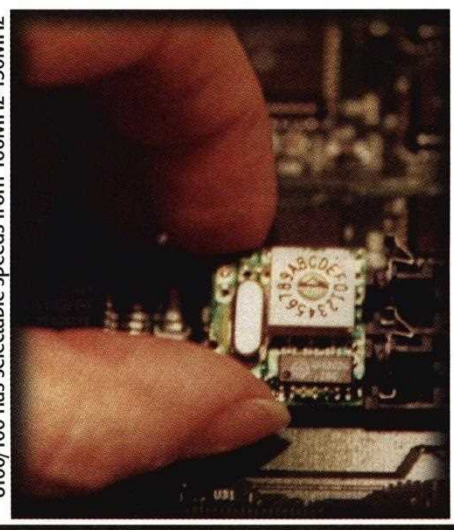

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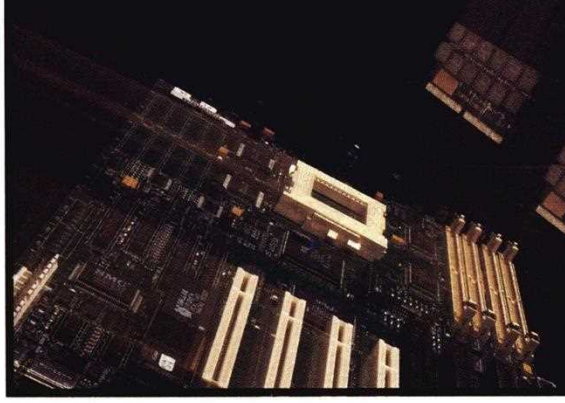

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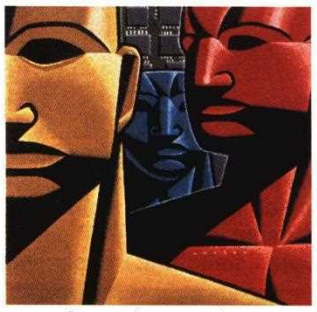

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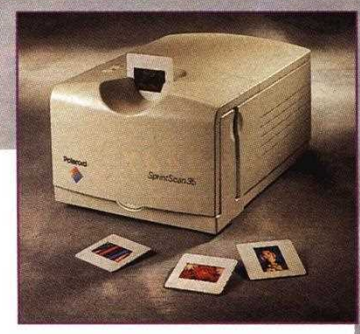

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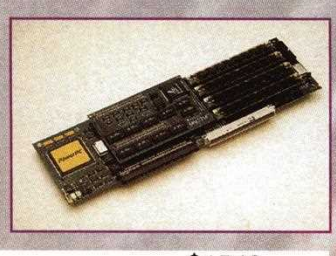

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Memory

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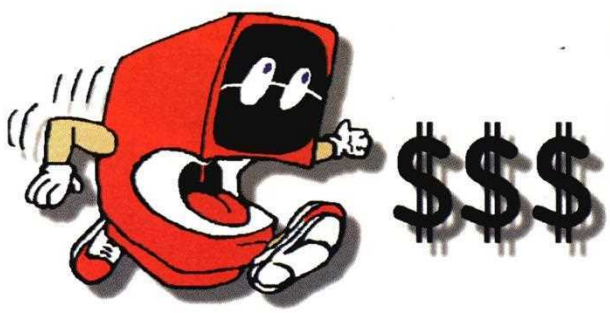

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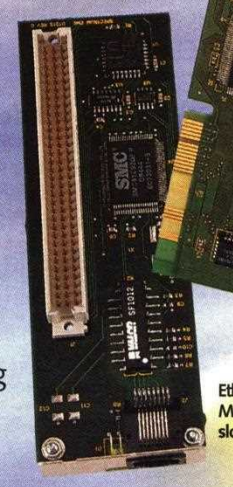

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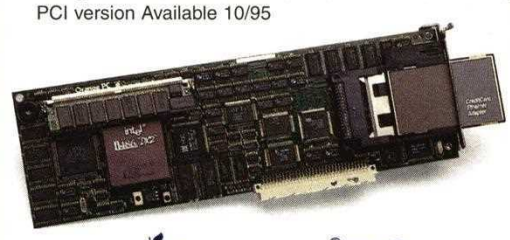

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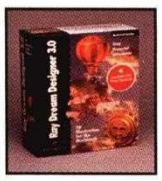

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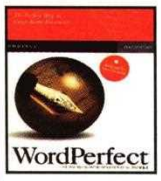

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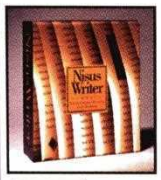

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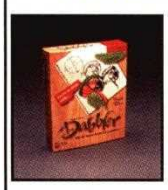

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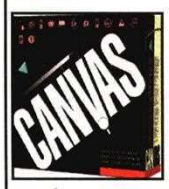

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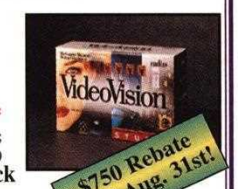

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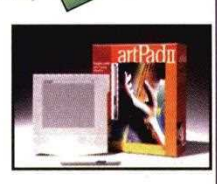

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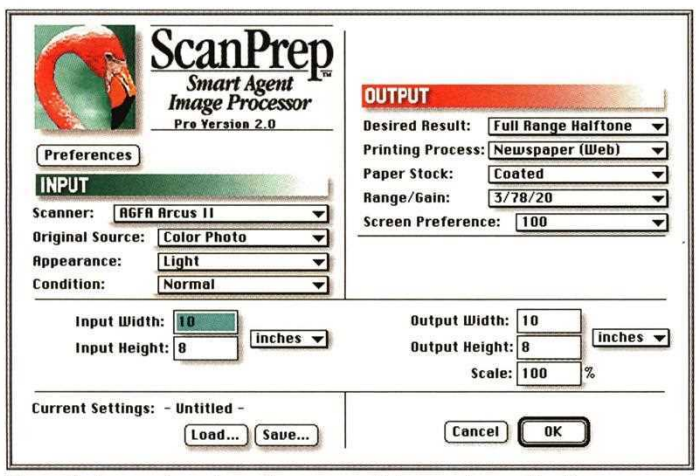

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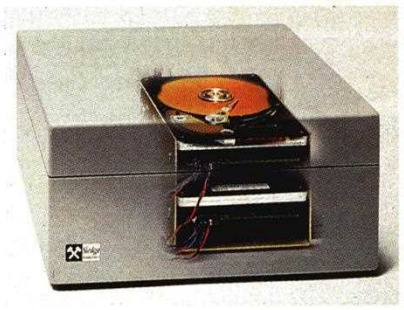

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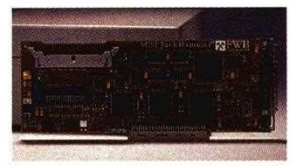

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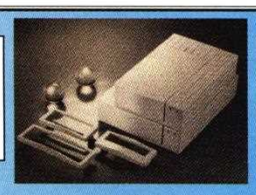

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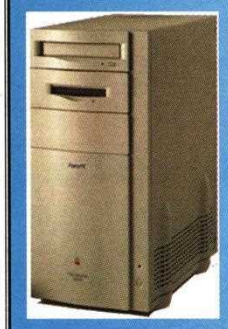

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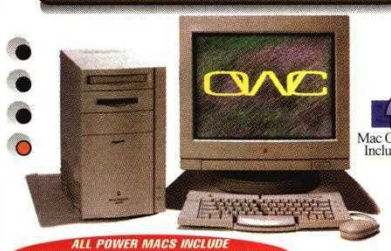

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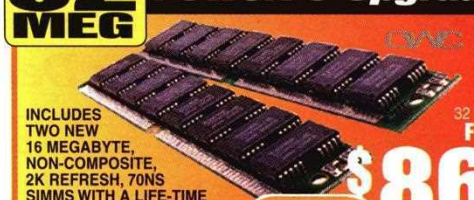

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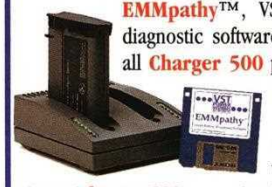

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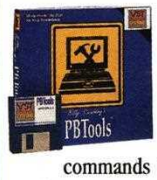

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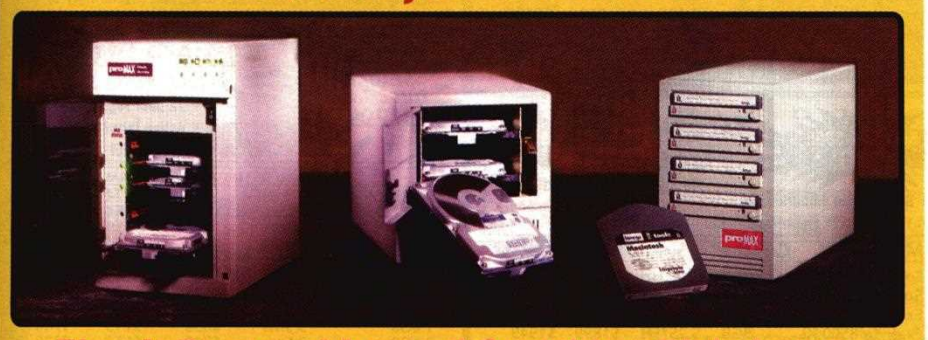

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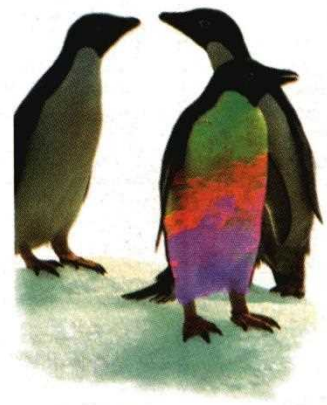

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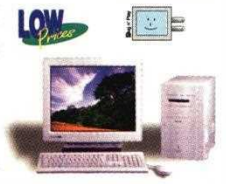

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SyQuest 88C	$250	$290	$315	
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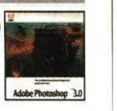

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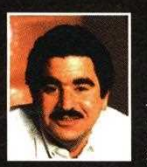

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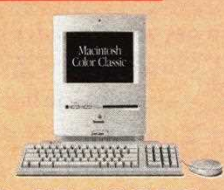

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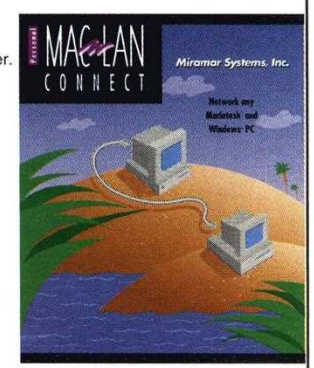

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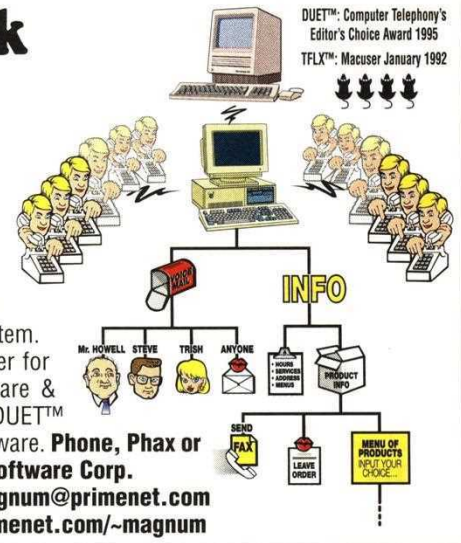

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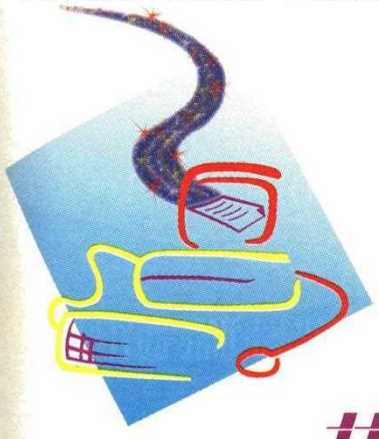

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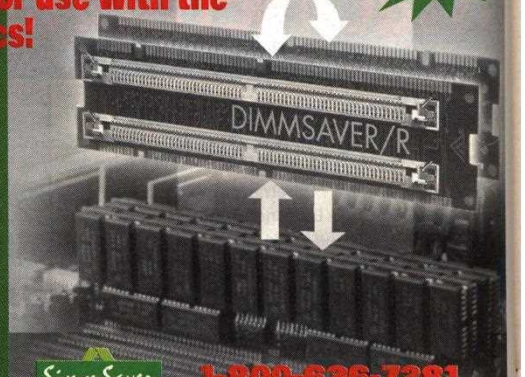

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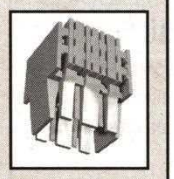

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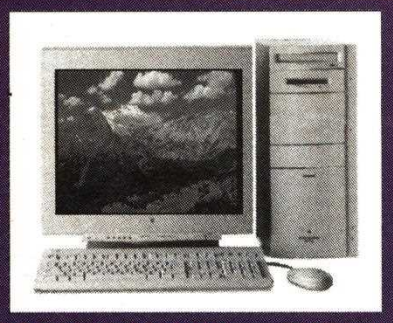

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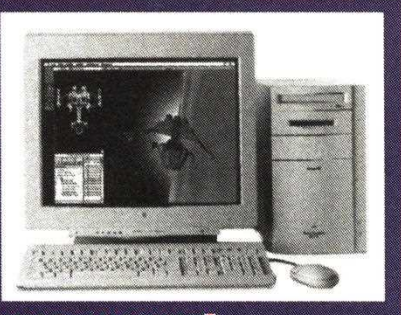

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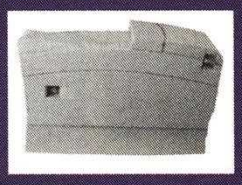

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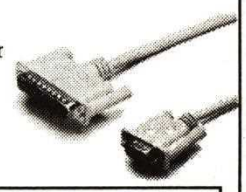

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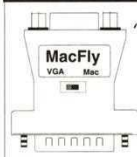

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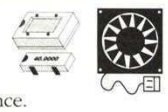

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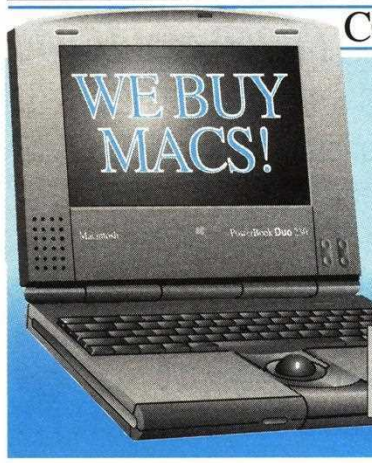

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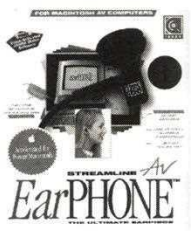

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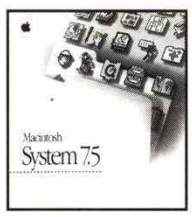

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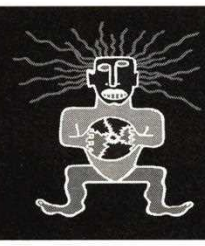

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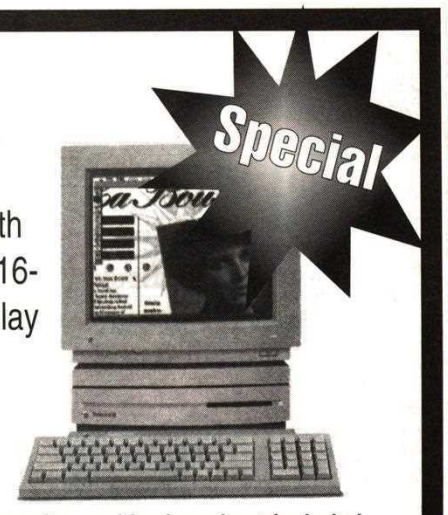

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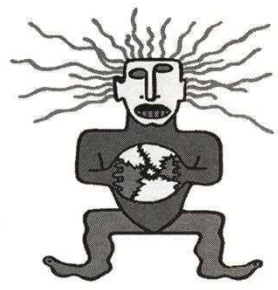

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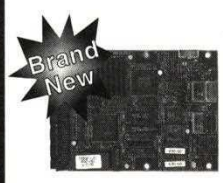

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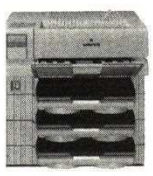

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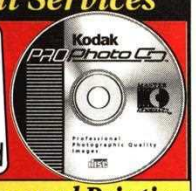

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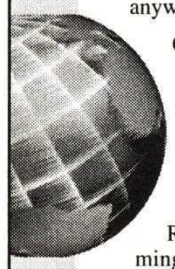

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Copland

From Page 1

to meet. Even before the May WWDC announcement, engineers who had analyzed the Copland project were saying that the huge undertaking — almost a complete rewrite of the Mac OS — would require more time than Apple was projecting, even if additional resources were used.

"This is Apple's biggest software project ever, and they're doing it with [Apple's] least-experienced team ever," one informed observer noted, citing the recent engineering "brain drain" to other companies. "Plus, I think they underestimate how difficult backward compatibility will be."

Sources said Apple is investigating a range of potential solutions to the reported delay but has, thus far, made no changes in its plans.

One possibility under discussion is to adjust official schedules to better reflect the time the full project will likely take. Current estimates reportedly predict a release date no sooner than early 1997.

With Microsoft Corp.'s Windows 95 breathing down its neck, however, Apple is reportedly reluctant to postpone Copland.

Another option is to separate the Copland interface components, which define the user-experience, from the operating system's kernel, which provides protected memory and pre-emptive multitasking. This route would have Apple introduce the new user-experience controls and other features in an interim OS update, while leaving the kernel features to a later release.

The Copland interface project, code-named MUSE, is reportedly far along. Features of the new user experience include a new visual interface, user-specific environments, and replacements for Open and Save dialog boxes.

While not all components of MUSE could be offered at once, sources said, many could ship earlier than mid-96. Apple reportedly has high hopes that MUSE will garner considerable positive press coverage, so some internal marketing strategists are said to favor this plan.

One third-party developer said: "I think if Apple was to migrate lots of Copland stuff back to System 7.5, it would help the adoption of Copland by developers. We could modify our programs now to support those new APIs and have a lot less to change to be Copland-savvy when we get seeded with Copland."

Earlier this year, the company reportedly considered releasing an interim OS between System 7.5 and Copland, but the project was nixed. Sources said company executives expressed concerns that Apple needed a more substantial answer to Windows 95.

Developers at WWDC in May were astonished by the Copland demonstrations, which rarely crashed and were impressive in their scope and speed. "But a demo is just a demo," said one developer who requested anonymity. "Look closely and you'll see they never demoed two features without rebooting; they have stuff working as independent units, but there's not much integration yet."

Sources said Apple is still at the pre-alpha stage with its new OS. Assuming Copland required the same amount of time to beta test as System 7.0 — which took eight months — the beta version would have to be ready in September, a goal few sources believe Apple can meet. □

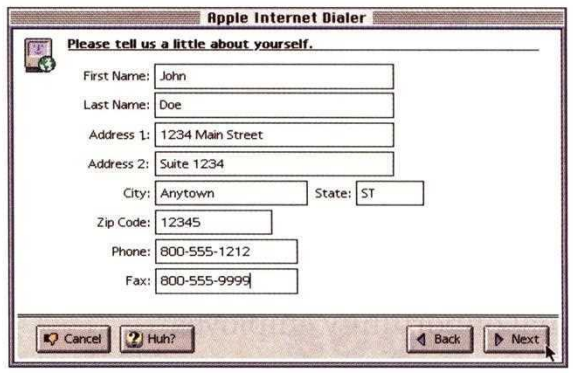
Apple to offer one-stop Net kit

By James Staten

Apple will beef up its Internet offerings this week with a product targeted at users seeking easy online access.

The Apple Internet Connection Kit, priced at $59 and slated to ship on CD-ROM and floppy disk in September, will marry leading shareware Internet tools with a new dial-up and registration interface that will configure the user's connection automatically through a choice of Internet service providers.

The kit will include Netscape Communications Corp.'s Navigator; Claris Corp.'s Emailer Lite, a version of the e-mail client limited to a single account; Progressive Network's RealAudio player; Aladdin Systems Inc.'s StuffIt Expander; Adobe Systems Inc.'s Acrobat Reader; Apple's QuickTime VR Player; tools for FTP, Usenet newsgroup reading, terminal emulation, Point-to-Point Protocol and Serial Line Internet Protocol; and a new tool, the Apple Internet Dialer.



The Apple Internet Dialer provides a simple interface for setting up an account with an Internet service provider and configuring the connection.

Upon installation, the kit will place all the included applications in the Launcher and open the Apple Internet Dialer. This application will gather users' personal information, help them choose an Internet service provider, then register them to create a new account.

Users will be able to open accounts with Portal Information Network Inc., MCI Communications Corp., Uunet Technologies Inc. or Netcom On-Line Communication Service Inc. Dialer will let them import Internet settings or send the registration information to other Internet service providers.

The CD-ROM will include Apple Guide help files and documentation in Acrobat format for most included applications. □

Newer

From Page 1

Mac LC and LC II models. The accelerators replace the 16-MHz 68020 and 68030 processors on these Macs with corresponding 32-MHz models. Versions of the cards providing only CPU acceleration and the 32-Kbyte cache, called the Comet 020 and Comet 030, will cost $180 and $200, respectively.

Newer will also provide Ethernet-only cards for the LC PDS, the Communications Slot in Quadra 630-based machines and the NuBus slot in most Macs. The cards will be priced from $79 to $99.

Newer said it will be offering Ethernet via a PCMCIA solution.

While only PowerBook 500-series laptops with the PowerBook PCMCIA Expansion Module provide an interface to these credit-card-size devices, Newer said it plans to bring the standard to all Mac models through its $395 PC Card Drive. This external device will provide two stacked Type II PCMCIA slots. It will connect to desktop Macs through either a Newer NuBus or PCI connector card or to the PowerBook Duo through the $325 PC Card MicroDock, a minidock with a connector for the external device. A bundle of the MicroDock and PC Card Drive will cost $700.

PCMCIA support will also help Newer push its way into the modem crowd. The company plans to unveil a Type II 28.8-Kbps data and 14.4-Kbps fax card priced at $399 and a 14.4-Kbps fax and data unit priced at $185.

Finally, Newer's PC Card Drive will serve as the conduit that brings Newer into the realm of PCMCIA memory. The company will unveil flash memory cards in 2-, 4-, 8-, 10-, 20- and 40-Mbyte capacities priced from $165 to $1,900. Newer will also show new memory modules, video RAM and cache cards for the new line of Power Macs.

Already a heavyweight in the PowerBook Duo minidock market, Newer will let out its belt to make room for three new products. In addition to the PC Card MicroDock, Newer will announce a new $150 external floppy drive that houses a standard SuperDrive mechanism and the $125 Floppy MicroDock. The floppy drive and Floppy MicroDock will be sold together for $265.

Like the current MicroDock family, the floppy and PCMCIA docks provide an ADB port for an external keyboard and mouse.

On the accelerator front, Newer will extend its products beyond CPU speed boosters.

Blast 3-D is a new QuickDraw 3D accelerator that will fit into the PDS of the Power Mac 6100, 7100 and 8100. It will come in a variety of configurations, supporting accelerated 24-bit color at up to 1,152 by 870 pixels on 21-inch monitors running in 2-D mode. In 3-D mode, it will support 16-bit color at the same resolution and monitor size. With additional VRAM, the board will support resolutions up to 1,600 by 1,200 pixels. It will also perform 24-to-16-bit dithering through double buffering without a speed penalty, the company said. A PCI version is expected later this year. Pricing has not been set.

Newer also said it plans to bring clock-chipping acceleration to the new Power Mac line through the $150 PowerClip 9500/8500. The company said the add-on will increase the speed of these machines' PowerPC 604 chip from 120 MHz to more than 160 MHz; the speed can be selected via a series of DIP switches on the accelerator.

Newer Technology of Wichita, Kan., can be reached at (316) 685-4904 or (800) 678-3726; fax (316) 685-9368; sales@newertech.com; http://www.newertech.com. □

PGPFone

From Page 1

all that can be heard is static.

Version 1.0 for the Mac works only via direct-dial modem connections, but programmers Zimmermann, Will Price and Chris Hall said they expect to ship by the end of this month a version that communicates over the Internet. By the end of October, PGPFone will also operate on an AppleTalk LAN using Open Transport. A Windows 95 version is also planned for release this month; a Windows 3.1 version will not be created, but OS/2 is being considered, the group said.

PGPFone establishes its secure connections using a public encryption algorithm called Diffie-Hellman, which exchanges keys at the time of the call. No previous trading of keys among users is necessary, unlike data-encryption products such as MacPGP. Users can select the scheme used to scramble their voices. TripleDES or Blowfish, two extremely powerful standards for encryption, may be used, depending on the speed of the host Mac.

"Someone could run PGPFone in the background, receive a call from an unknown person, and the call would be absolutely secure," Price said.

PGPFone adapts to the Mac on which it runs, changing sound quality to match the hardware available. It requires at least a 33-MHz 68030 CPU and will be available from the outset as a native Power Mac application.

"At 9,600 [bps], voice quality is fair but definitely intelligible," Price said. "At 14,400 everything sounds pretty good, and comfortable conversations are possible. At the top range, two Power Macs with 28.8-Kbps modems can achieve sound quality that is notably superior to normal phone conversations."

Zimmermann is well-known for his legal battles with the U.S. government over PGP (Pretty Good Privacy), a utility considered the standard for Internet e-mail encryption. To avoid a repeat of those troubles, PGPFone will be licensed only for noncommercial use within the United States.

"We'll likely have a commercial version available to corporations," Zimmermann said.

PGPFone will be uploaded to the Massachusetts Institute of Technology's PGP FTP server at ftp://net-dist.mit.edu. The full source code will be released for peer review. □

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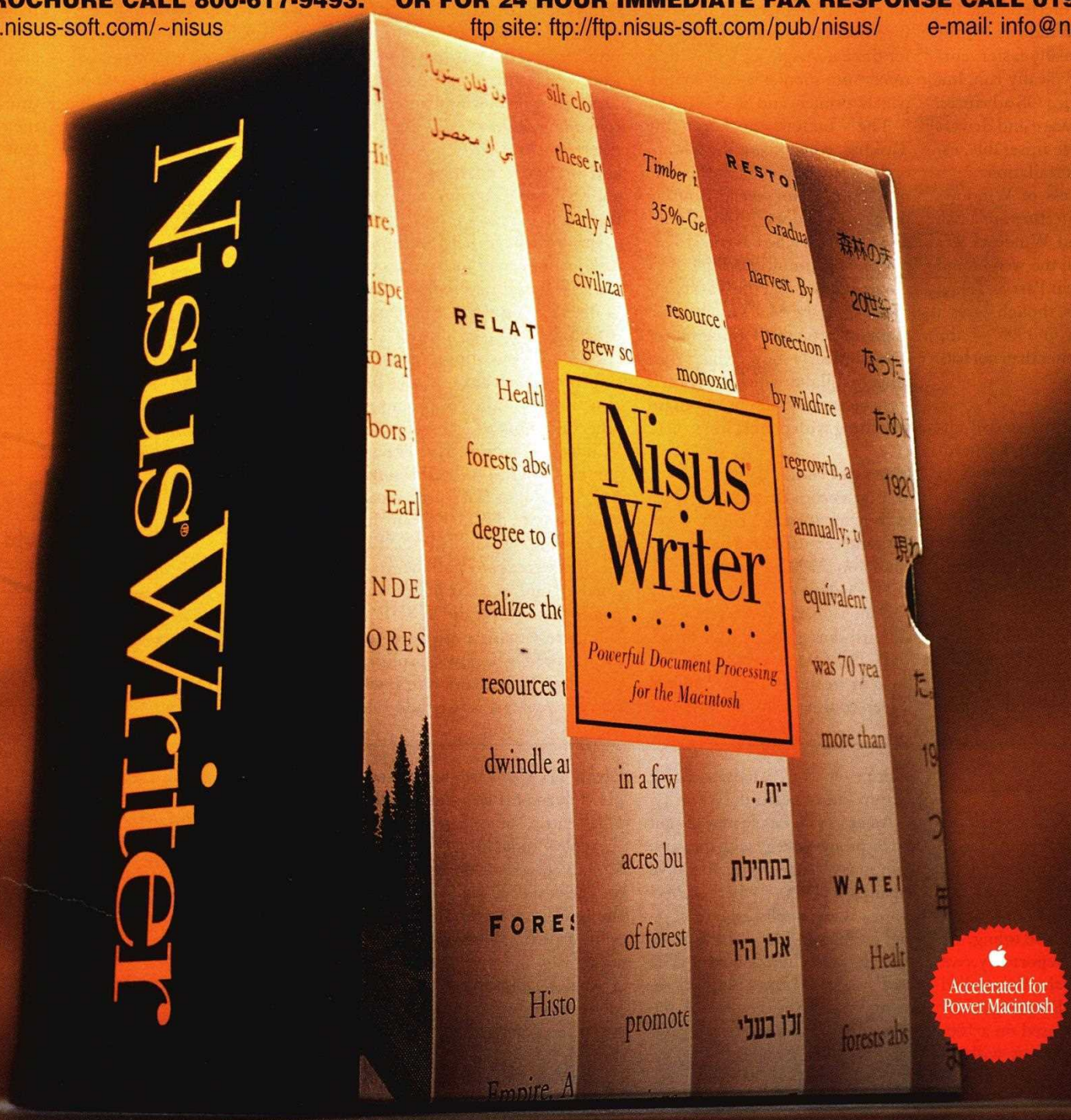

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Windows 95

From Page 1

is deeply, profoundly better than that of Windows 3.1. And, as predicted, many of the changes make Windows 95 unmistakably similar to a Mac running System 7.5. Soon users of Intel-standard PCs will enjoy working with folder icons that represent real disk hierarchies; an ever-present menu for software, control panels and frequently used files; long file names that don't have to hold the cryptic keys to document type; and a help system that can act out its answers. Mac users may suppress smug grins at these advances, but the implementations are good.

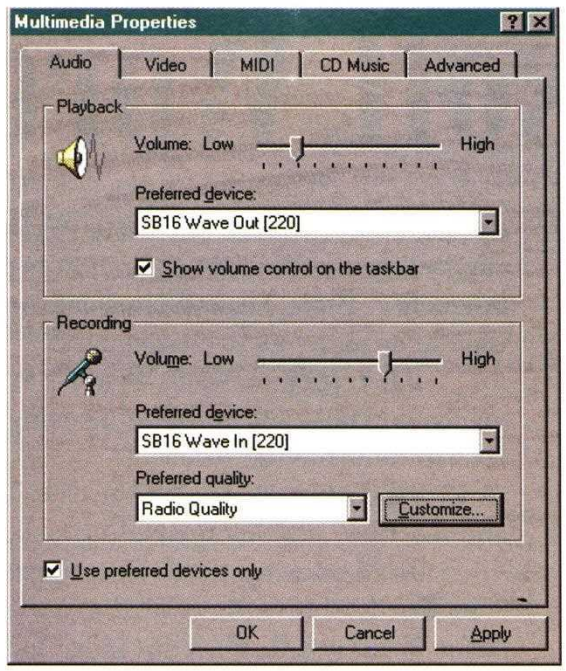
As Apple will be eager to tell you, however, there's more to a computer platform than a graphical user interface. It's now well-documented that 16-bit, nonmultitasking, nonprotected code lies at the heart of Windows 95; the upgrade is not really faster; current programs typically run, but they don't embrace OS advances; and legacy hardware and drivers can still make life miserable, especially during installation.

The past success of Windows and the PC architecture are a ball and chain around Windows 95's ankle; we'll detail the weight and drag of this load in Part 3. Taken on its own merits, though — as a GUI being born in 1995 — the total package is better than not bad.

Tit for tat

Right off the bat, users will appreciate the modish GUI. Microsoft has imparted to Windows 95 some smart styling that will engage users. The focal point is the Start button, which reveals a pop-down list of multilevel, hierarchical items. To be blunt, it's a glorified Apple menu.

The Start menu includes program groups translated from Windows 3.1's Program Manager; Find and Help commands — better here than on other menus; an unoriginal submenu of recently used documents; a Run command for those nostalgic for DOS; and a miniature submenu for control panels, printers and Start settings.



Property values: Tabbed windows organize layers of information and settings. For the morass of PC configuration options, they are an improvement, and their interfaces are clear as a bell. The question mark button in the Windows title bar summons brief help messages for items shown.

The button anchors the Taskbar, which spans the bottom of the screen and displays the time plus buttons for every running program and open "Finder" window. Anyone who has tried to explain Mac multitasking to a novice will see that the Taskbar is better than the Mac's application menu because the Taskbar is obvious. It clearly shows what's running, highlights which program is frontmost and allows program switching with one click.

Icons get real

Windows 95's desktop provides high-level logical groupings of data and resources that are mostly absent on the Mac.

My Computer, the primary desktop icon, holds references for all hard disks, floppy disk drives and CD-ROM players attached or built in to the PC plus optional server-volume icons. Beneath this is the Network Neighborhood displaying nearby LAN resources, such as file-sharing PCs or shared printers, and the Entire Network icon, which lists everything else. Depending on the installation, the remaining desktop icons are The Internet, The Microsoft Network and the universal Inbox. (We'll address these communications features in Part 2.)

Inside each hard disk or floppy disk icon are a lot more icons — one, it seems, for every document or directory on the disk! Next to the thinly disguised Trash ("Recycle Bin"), this direct relationship between icons and the file structure of volumes is what most observers think of when they say Windows 95 is more Mac-like.

Here Microsoft made some bad decisions. The large-icon views imitate the Mac's, but the list views are generally less capable. If the company had incorporated an outline view in desktop windows as Apple did in System 7.0, there would be no need for the vaunted Windows Explorer program. That many users will actually prefer a retrograde File Manager replacement like Explorer is hard evidence of the damage Windows 3 has done to computing's psyche.

Work within the Windows 95 desktop is safeguarded by a very Mac-like feature we wish existed on the Mac: multilevel Undo for all file operations. And associated with every icon is a property sheet, a tabbed window that's like the Finder's Get Info, magnified 10 times.

Shortcut icons are alias knockoffs with a difference. Though the implementation is not perfect, a shortcut can refer to data inside documents as well as to files and folders. A shortcut may also point to information on a LAN server, remote dial-up computer, Internet site or the Microsoft Network.

In toto

As we've worked with Windows 95 and developed an appreciation for the OS, we've been challenged to duplicate its new functionality on a Mac. But that would require an extension-laden kludge, the likes of which we regularly bemoan as the problem rather than the solution.

While some additions are laughably behind the Macintosh state of the art, others trump Apple's strong suit. Microsoft has combined in one OS release many features that trickled out from Apple across a decade. But while small inconsistencies and limitations cropped up in the Mac OS over that span, Microsoft got a chance to learn from the mistakes of its GUI predecessor.

But history is not only liberating; in the case of Windows 95, the past stings. On every upgraded machine, old drivers, applications and CONFIG.SYS settings lurk like sinkholes, waiting to plunge users into the world of CP/M's mutant child. This is the difference between user interface and user experience. This is why, once they get over the thrill of Windows 95, many technically savvy and forward-thinking managers say they will skip it in favor of a future Windows NT that matches the rich, new GUI to an OS with fewer inherited liabilities. □

MPEG

From Page 1

Sources said the card, set to debut at Macworld Tokyo in March, will be bundled with an entry-level editing package that will use a storyboard interface and offer transitions, special effects and titling.

The card will reportedly cost about $500; it will also be bundled with some CPUs. Running in any PCI Power Mac based on a 100-MHz 601 or higher, it will require 16 Mbytes of RAM and a 1-Gbyte hard drive.

"The card answers a real need and will test the waters to see how large the market is for MPEG playback," said Rick Doherty, director of the Envisioneering Group Inc. of Seaford, N.Y.

Analysts said Apple may mount a two-prong strategy with the card: gain market share in the lucrative Japanese market — where MPEG is already an established format — and establish a Mac MPEG presence in the United States. The card's price tag "is just a little incremental cost [over the price of the Mac] to help jump-start the MPEG market," Doherty said.

While hundreds of movies are sold in MPEG format in Japan, only about 75 movies and about 250 Intel-standard-PC titles are available using MPEG in the U.S. market, according to Doherty. "By Christmas, you'll see another couple of dozen MPEG titles that are Mac-centric," he said.

Apple's initial MPEG foray, the $299 LC processor direct slot card for Performa 630-based machines, shipped last month and has reportedly surprised the company with strong sales and developer interest.

Apple sees hardware MPEG solutions as a transition to its ultimate goal of integrating software MPEG decoding into the Mac OS. "The 604 chip has the horsepower to deliver software MPEG," a source said. "Don't doubt that Apple is working feverishly on this."

Apple was unavailable for comment. □

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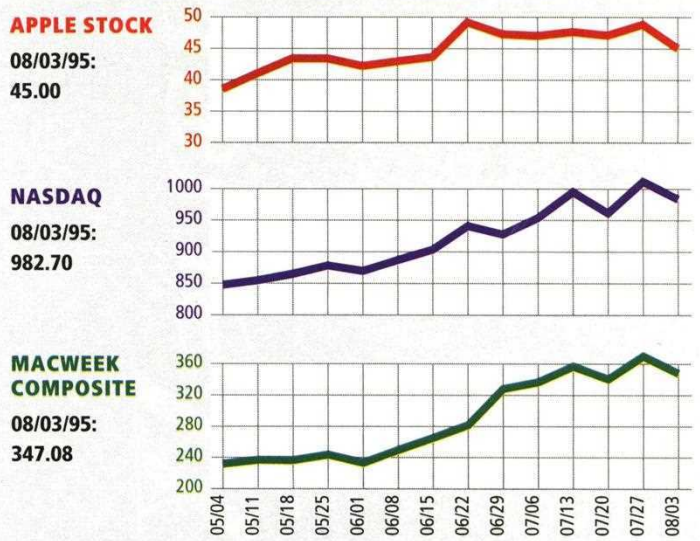

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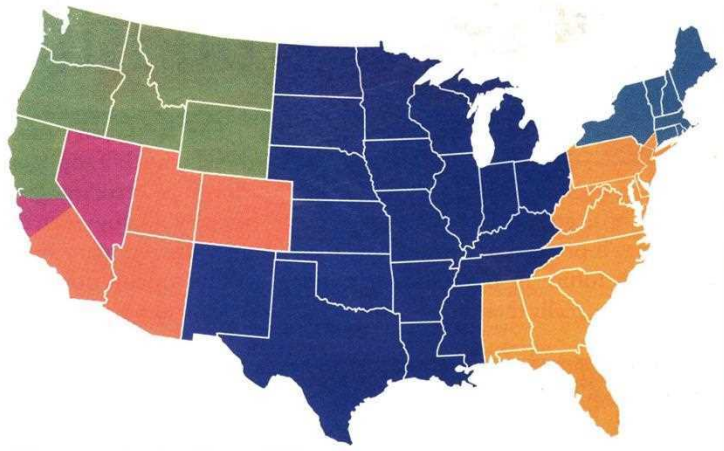

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Big sale on Bill's book on aisle 95

There are those who will tell you that the twin purchases last week of Capital Cities/ABC and CBS add up to good, solid business decisions. Then they'll proceed to explain how there really is a future in traditional television broadcasting, really there is.

The Knife isn't sure what crowd you travel with, but the people he talks to have more important things on their plate. They say they'll know soon enough when to put their discretionary funds into those kinds of investments now that the nation's most successful businessman has found time to pen a regular column in one of the nation's most respected monthly publications, the Price-Costco Connection.

Yes, starting this month Bill Gates will join the distinguished ranks of those who earn their daily bread by the pen. So if you can take your attention away from the new digital imaging wonders at your feet in Boston this week, use that Price-Costco membership for your own copy of its no-doubt-stellar newsletter.

Picking and choosing among a wide selection of merchandise will be good practice for your future Mac hardware purchasing, too, if Power Computing's aggressive pricing on its NuBus models stirs a response in kind from Apple.

October surprise

If you're having difficulty dropping NuBus cold turkey, October may be your month. That's when Power Computing expects to ship three new clones, starting at less than $2,000, in which PCI and NuBus can coexist peacefully thanks to a slick logic board design that supports many combinations of slots.

But if you have a fat Disney-class wallet, head on over to DayStar's booth at this week's expo for an example of what big, big bucks can do. In this case they can buy you a Genesis clone tricked out with every accelerator known to mankind and with enough RAM to embarrass even the most well-heeled among us.

Also at the expo, don't miss David Nagel's keynote, in which he'll reveal a three-day Newton developer conference in San Francisco starting Sept. 6. For those dying for details on Dante, this is a gig not to miss.

December response

Apple must have anticipated being outmaneuvered on both its high- and low-end flanks because it has already mobilized what it probably considers its most powerful weapon, the legendary Apple marketing team. How else to explain a return of the half-hour infomercial featuring that same loving family that so effectively gave witness last Christmas to the Mac advantage. This could be the vehicle Apple will use to reach the business market as well.

Everyday bargains

Few consider the GeoPort adapter the bargain of the decade, but that illusion of mediocrity will be shattered midway through next year when they hear about the upgrade that will offer V.34 support. Best of all, it will arrive as a simple software upgrade.

With luck, that will be well after the next major revision of Open Transport. Sources say it's on track for December with a bag full of features, including PPP-based ARA 3.0, AppleTalk deactivation, multihome AppleTalk, static IP registration and multicasting. About the only thing missing is per-machine multiple IP address support. That and a jargon glossary.

Meanwhile, Novell's version of IPX atop Open Transport is on track for February, which is, oddly enough, the same time that NetWare for the Power Surge Power Macs hits town. □

MacWEEK mugs come but once per tip. If your tip meets his exacting standards, you can use it to get the Knife to dip into his MacWEEK mug bag at (415) 243-3544, fax (415) 243-3641, Internet (mac_the_knife@macweek.ziff.com), AppleLink (MacWEEK) or CompuServe/ZiffNet/Mac. Fun for the entire family.

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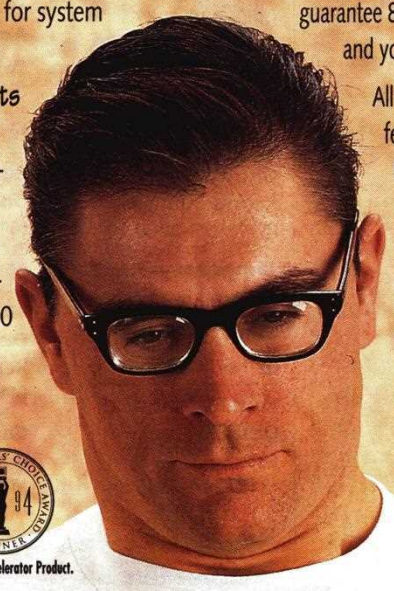

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☐ 01. Yes ☐ 02. No

1 What is your organization's primary business activity at this *entire* location?
(Select one only) Write Answer Here ➡

Non-Computer Related
01. Graphic Arts
02. Publishing
03. Advertising, Public Relations, Promotion
04. Digital Media Development
05. Entertainment/Broadcast
06. Commerical Printer
07. Service Bureau/ Pre-Press
08. Aerospace
09. Architecture, Engineering
10. Telecommunications
11. Government
12. Manufacturing
13. Education: College/ University/Trade
14. Education: High School/Elementary
15. Finance: Banking, Accounting, Insurance, Real Estate, Legal
16. Health, Medical
17. Non-Computer Retailer, Wholesaler, Distributor
18. Research and Development
19. Agriculture, Mining, Construction, Oil
20. Transportation, Utilities

Computer Related
22. Manufacturer (Computers, Software, Peripherals)
23. VAR, VAD, Systems/ Network Integrator
24. Retailer/Distributor
25. Systems House/Data Processing Service
26. Computer Consultant
27. Other Businesses and Services

99. Other_____ (please specify)

2 What is your job function?
(Select one only) Write Answer Here ➡

A. Networking/Data Communications
B. MIS/DP/Information Systems
C. Systems Engineering
D. Telecommunications
E. Graphic Arts/Design
F. Production/Pre-Press
G. Video Production
H. Audio Production
I. Communications/ Publishing/Public Relations/Advertising
J. Engineering/Architecture
K. Science/Research & Development
L. Education/Training/ Development
M. Manufacturing/ Operations/Production/ Quality Control
N. Administration/ Management/Personnel
O. Accounting/Finance/ Legal
P. Sales/Marketing
Q. Purchasing
R. Consulting

Z. Other_____ (please specify)

3 Which of the following brands of systems and/or applications software do you have installed at this *entire* location? (Check all that apply)

Operating Systems
☐ 01. System 7
☐ 02. System 6, 5 or earlier
☐ 03. Unix/Xenix/AUX/AIX
☐ 04. PowerOpen
☐ 05. Windows
☐ 06. NeXTStep
☐ 07. Solaris
☐ 08. OSF/Motif
☐ 09. Other_____ (please specify)

Network Operating Systems
☐ 11. Novell NetWare
☐ 12. Unix/NFS
☐ 13. LAN Manager
☐ 14. Banyan VINES
☐ 15. AppleShare
☐ 16. DEC PathWorks
☐ 17. Other_____ (please specify)

Groupware
☐ 19. Lotus Notes
☐ 20. Windows for Workgroups
☐ 21. FirstClass
☐ 22. Novell GroupWise
☐ 23. Apple Open Collaboration Environment (AOCE)
☐ 24. Other_____ (please specify)

Database Engines
☐ 26. Oracle
☐ 27. Sybase SQL Server
☐ 28. Ingres
☐ 29. Informix
☐ 30. 4D Server
☐ 31. DB2
☐ 32. Other_____ (please specify)

On-Line Services
☐ 34. America Online
☐ 35. Compuserve
☐ 36. e-World
☐ 37. Prodigy
☐ 38. Internet
☐ 39. Delphi
☐ 40. Genie

4 Please indicate the quantities of the computers currently installed and indicate the computers planned for purchase in one year at this *entire* location.

(Write in accurate quantities for all that apply)	Currently Installed (Quantity)	PLAN TO PURCHASE
Macintosh/Compatible		
Apple Power Mac 8100	1.	1. ☐
Apple Power Mac 7100	2.	2. ☐
Apple Power Mac 6100	3.	3. ☐
Radius Power Mac Compatible	4.	4. ☐
Power Computing Power Mac Compatible	5.	5. ☐
Daystar Power Mac Compatible	6.	6. ☐
Other Power Mac Compatible	7.	7. ☐
Macintosh Quadra	8.	8. ☐
Macintosh Centris	9.	9. ☐
Macintosh Performa	10.	10. ☐
Macintosh PowerBook	11.	11. ☐
Macintosh Duo	12.	12. ☐
Macintosh Other (II, LC, SE, etc...)	13.	13. ☐
Other Mac Compatible	14.	14. ☐
Other Desktops		
IBM/Compatible Desktop/Laptop/Notebook	15.	15. ☐
PowerPC (Non-Mac Compatible)	16.	16. ☐
Workstation (SPARC, MIPS, HP/Apollo, etc)	17.	17. ☐
Other Microcomputers	18.	18. ☐

USE NUMBERS ONLY

5A How many servers are installed at this *entire* location? (Use numbers only)

5B How many LANs are installed at this *entire* location? (Use numbers only)

5C How many Macintoshes are connected to the LANs indicated in Question 5B above? (Use numbers only)

6 If applicable: how many Macintoshes are sold, resold, or recommended in one year at this *entire* location?

A. Retailer: Number sold per year_____
B. Reseller: Number resold per year_____
C. Consultant: Number purchased by your clients through your firm's recommendation per year_____
D. Other: Number sold/resold/recommended per year_____
☐ E. Not Applicable

7A Which of the following Macintosh-related products do you specify, recommend, buy or approve the purchase of? (Check all that apply)

Systems
☐ 01. Apple Macintoshes
☐ 02. Mac Compatibles
☐ 03. IBM Compatible Micros
☐ 04. Servers
☐ 05. Workstations
☐ 06. Minis/Mainframes
☐ 07. Newton PDA
☐ 08. Pen-Based Computers

Networking
☐ 10. LANs
☐ 11. WANs
☐ 12. Mac to PC Links
☐ 13. Mac to Mini/ Mainframe Links
☐ 14. Mac to Unix Workstation Links
☐ 15. Modems
☐ 16. Communication/ Network Software
☐ 17. Bridges/Routers/ Gateways
☐ 18. Hubs
☐ 19. NICS

Printers
☐ 21. Laser
☐ 22. Color Laser
☐ 23. InkJet
☐ 24. Color InkJet
☐ 25. Dye Sub
☐ 26. Thermal Wax
☐ 27. Plotter
☐ 28. Portable Printer

Image Input
☐ 30. Digital Camera
☐ 31. Flatbed Scanners
☐ 32. Handheld Scanners
☐ 33. Slide Scanners
☐ 34. Drum Scanners
☐ 35. Black/White Scanners

Displays
☐ 37. 14 inch
☐ 38. 15 inch
☐ 39. 17 inch
☐ 40. 21+ inch
☐ 41. LCD Projection Panel
☐ 42. Presentation Monitors

Peripherals
☐ 44. UPS
☐ 45. External Speakers
☐ 46. Input Devices
☐ 47. Video Deck
☐ 48. Image Setter

Storage
☐ 50. Photo CD
☐ 51. Magneto Optical
☐ 52. RAID
☐ 53. Hard Drive 1 Gig +
☐ 54. Hard Drive < 1 Gig

Add-In Boards
☐ 56. CD Recorder
☐ 57. Memory Boards
☐ 58. Display Boards
☐ 59. Video Digitizer Boards
☐ 60. Accelerator Boards
☐ 61. Sound Boards
☐ 62. MIDI
☐ 63. Video Capture/ Compression

99. ☐ None of the above

Signature_____
•
Title_____ Date ___/___/___

7B Which of the following systems and/or applications software do you specify, recommend, buy or approve the purchase of? (Check all that apply)

Graphic Arts
☐ 01. Desktop Publishing
☐ 02. Electronic Publishing
☐ 03. Painting/Drawing Programs
☐ 04. Photo Retouching
☐ 05. Page Layout
☐ 06. Illustration Programs
☐ 07. Fonts
☐ 08. Pre-Press
☐ 09. Color Management
☐ 10. Digital Video
☐ 11. Other_____ (please specify)

Multimedia
☐ 13. Authoring Software
☐ 14. Video Editing
☐ 15. Sound Editing
☐ 16. Music Composition/ Editing
☐ 17. Animation
☐ 18. Clip Media (Sound and Art)
☐ 19. Other_____ (please specify)

Presentation Graphics
☐ 21. Presentation Software
☐ 22. Multimedia Presentations
☐ 23. Charting Programs
☐ 24. Other_____ (please specify)

Design/Engineering
☐ 26. CAD/CAM
☐ 27. 2/D - 3/D Modeling
☐ 28. Simulation
☐ 29. Other_____ (please specify)

Business Applications
☐ 31. Word Processing
☐ 32. Spreadsheets
☐ 33. Databases
☐ 34. Project Management
☐ 35. Accounting/Payroll
☐ 36. Groupware
☐ 37. Desktop Video Conf.
☐ 38. Document Management
☐ 39. Mapping/GIS
☐ 40. Pen-Based Applications
☐ 41. Other_____ (please specify)

Systems Management
☐ 43. Operating Systems
☐ 44. Utilities
☐ 45. Applications Development
☐ 46. CASE
☐ 47. Programming Languages
☐ 48. Compilers
☐ 49. SQL Applications
☐ 50. Client Servers Applications
☐ 51. Other_____ (please specify)

99. ☐ None of the above

8 If you indicated purchasing involvement for computers, computer products or services in Question 7A or Question 7B, for how many Macintoshes do you have this involvement? (Select one only) Write Answer Here ➡

01. 2000+
02. 1000-1999
03. 500-999
04. 100-499
05. 50-99
06. 20-49
07. 10-19
08. 5-9
99. None

9 For what applications are the Macintoshes at your location used? (Check all that apply)

☐ 01. Graphic Arts
☐ 02. Presentation Graphics
☐ 03. Multimedia
☐ 04. Design/Engineering
☐ 05. Business Applications
☐ 06. Systems Management
☐ 99. Other_____ (please specify)

10 Over the course of one year, do you specify, recommend, buy, or approve the purchase of host systems, desktops, networking products, peripheral equipment and/or software worth: (Write number in box)

1. $5,000,000 or more
2. $2,500,000 to $4,999,999
3. $1,000,000 to $2,499,999
4. $600,000 to $999,999
5. $400,000 to $599,999
6. $200,000 to $399,999
7. $100,000 to $199,999
8. $50,000 to $99,999
9. $25,000 to $49,999
10. $10,000 to $24,999
11. Less than $10,000
99. None

Product Category	For this location (Write number in box)	For other locations (Write number in box)
Host Systems (Mainframes/Minis)	A.	G.
Desktops/Portables (Micros/Workstations)	B.	H.
Networking Products (include Servers)	C.	I.
Peripheral Equipment	D.	J.
Software Products	E.	K.
Service/Support	F.	L.

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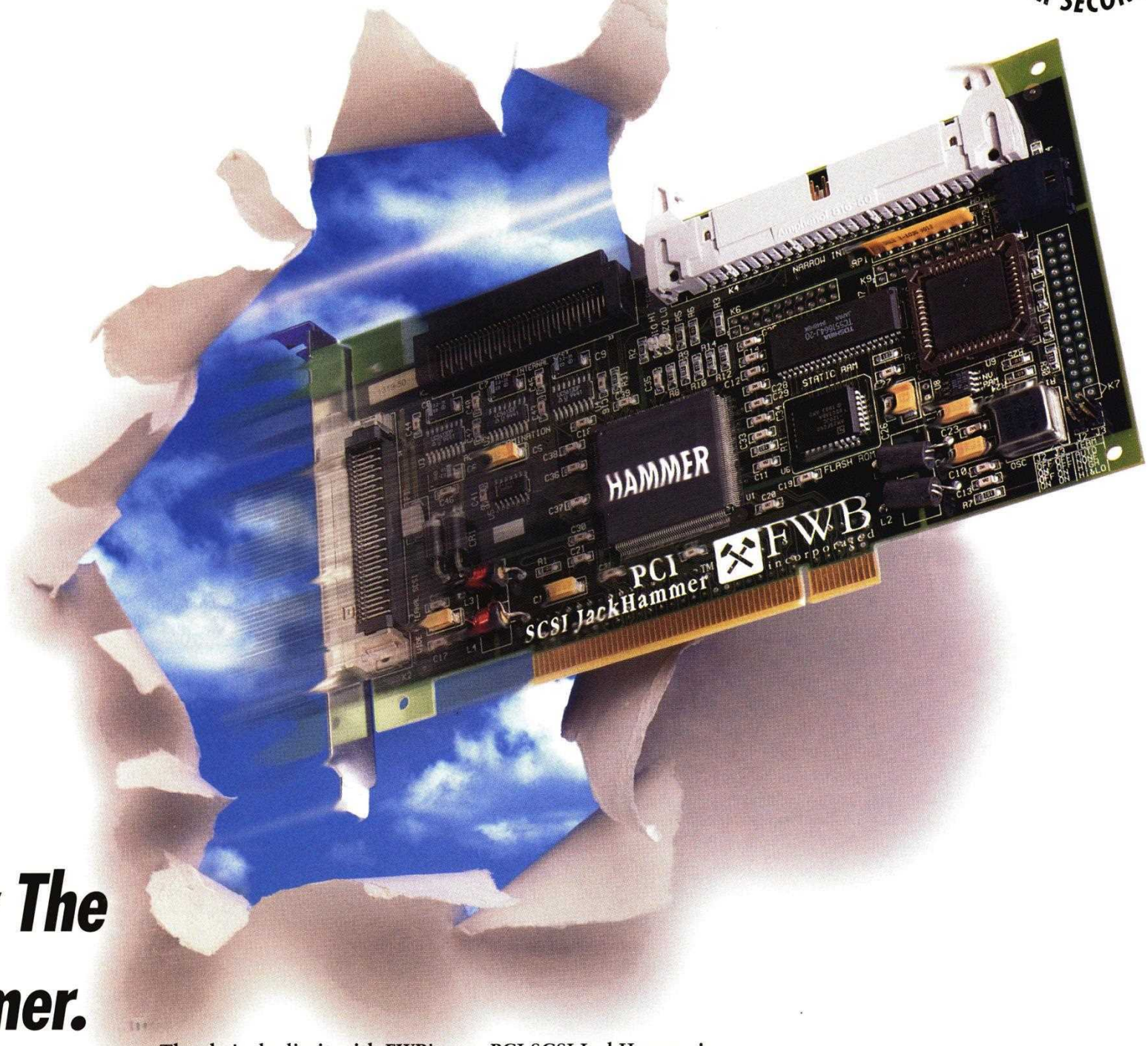

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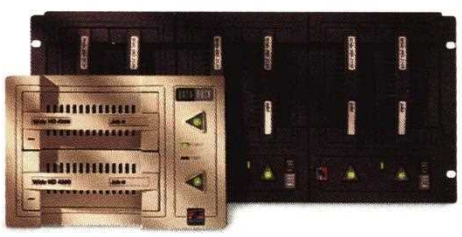

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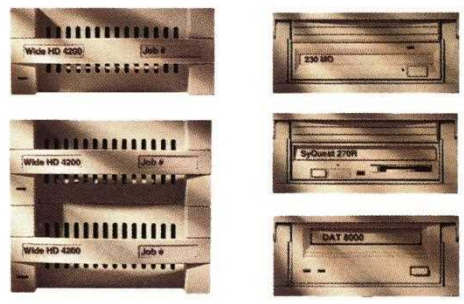

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